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REQUIRED COMPETENCY AREAS, GOALS, AND OBJECTIVES FOR POSTGRADUATE YEAR TWO (PGY2) CARDIOLOGY PHARMACY RESIDENCIES

Introduction

The competency areas, goals, and objectives are to be used in conjunction with the *ASHP Accreditation Standard for Postgraduate Year Two (PGY2) Pharmacy Residency Programs.* The first five competency areas described herein are required, and the others are elective.

The required competency areas and all of the goals and objectives they encompass must be included in all programs. Programs may add one or more required additional competency areas from the elective competency area choices to meet program-specific needs. Programs selecting an additional competency area are not required to include all of the goals and objectives in that competency area. In addition to the potential additional competency areas described in this document, programs are free to create their own unique competency areas with associated goals and objectives based on the specific needs of their program. Each of the objectives associated with the goals encompassed by the program's selected program competency areas (required and additional) must be taught and evaluated at least once during the residency year. Elective competency area(s) may also be selected for specific residents when creating their residency development plan.

Each of the objectives listed in this document has been classified according to educational taxonomy (cognitive, affective, or psychomotor) and level of learning. An explanation of the taxonomies is available elsewhere.[1]

Competency areas for PGY1 pharmacy residencies are available on the ASHP website. PGY2 competency areas, goals, and objectives in cardiology pharmacy are differentiated from those from PGY1 by specialization and the expectation of PGY2 residents for greater work competence and proficiency.

Definitions

Competency Areas: Categories of the residency graduates' capabilities.

Competency areas are classified into one of three categories:

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[1]Anderson, L. W. and Krathwohl, D. R., et al (Eds.) (2001) *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Allyn & Bacon. Boston, MA (Pearson Education Group).

Required: Five competency areas are required (all programs must include them and all their associated goals and objectives).

Additional (for program): Competency area(s) that residency programs may choose to use (in addition to the five required areas) to meet program-specific program needs. Additional competency areas also include those developed by individual programs.

Elective (for specific residents): Competency area(s) or specific goals and objectives within the competency area(s) selected optionally for specific resident(s).

Educational Goals (Goal): Broad statement of abilities.

Educational Objectives: Observable, measurable statements describing what residents will be able to do as a result of participating in the residency program.

Criteria: Examples that describe competent performance of educational objectives. Since the criteria are examples, they are not all required but are intended to be used to give feedback to residents on how well they are doing and how they can improve on the skill described in educational objectives while they engage in an activity.

Activities: The Standard requires that learning activities be specified for each educational objective in learning experience descriptions. Activities are what residents will do to learn and practice the skills described in objectives. Activities are the answer to the question, "What can residents do in the context of this learning experience that will provide the kind of experiences necessary to achieve the educational objective?" (Compare and contrast activities with criteria by referring to the definition of criteria immediately above.) Specified activities should match the Bloom's Taxonomy learning level stated in parentheses before each objective.

Example:
Objective R1.1.2: (Applying) Interact effectively with patients, family members, and caregivers.
Learning activity: Provide education to patients regarding proper medication use and administration, adherence, and possible adverse drug effects for all new medications initiated during clinic appointments.
Criteria:
- Interactions are respectful and collaborative.
- Uses effective communication skills.
- Shows empathy.
- Empowers patients to take responsibility for their health.
- Demonstrates cultural competence.

Competency Area R1: Patient Care
(See the appendix for additional specific requirements.)

Goal R1.1: In collaboration with the health care team, provide comprehensive medication management to patients with cardiovascular diseases following a consistent patient care process.

Objective R1.1.1: (Applying) Interact effectively with health care teams to manage medication therapy for patients with cardiovascular diseases.
Criteria:
- Interactions are cooperative, collaborative, communicative, and respectful.
- Demonstrates skills in consensus building, negotiation, and conflict management.
- Demonstrates advocacy for the patient.
- Effectively contributes pharmacotherapy knowledge and patient care skills as an essential member of the healthcare team.

Objective R1.1.2: (Applying) Interact effectively with patients with cardiovascular diseases, family members, and caregivers.
Criteria:
- Interactions are respectful and collaborative.
- Maintains accuracy and confidentiality of patients' protected health information.
- Uses patient specific effective (e.g., clear, concise, accurate) communication skills.
- Shows empathy.
- Empowers patients, family members, and caregivers regarding the patient's well-being and health outcomes.
- Demonstrates cultural competence.
- Communicates with family members to obtain patient information when patients are unable to provide the information.
- Communicates with patient and family about initiation and changes of patient therapies.
- Demonstrates advocacy for caregivers.

Objective R1.1.3: (Analyzing) Collect information on which to base safe and effective medication therapy for patients with cardiovascular diseases.
Criteria:
- Collection/organization methods are efficient and effective.
- Collects relevant information about medication therapy, including:
  o History of present illness.
  o Relevant health data that may include past medical history, health and wellness information, biometric test results, and physical assessment findings.
  o Social history.
  o Medication history, including prescription, non-prescription, illicit, recreational, and non-traditional therapies; other dietary supplements; immunizations; and allergies.
  o Patient assessment (examples include, but are not limited to, physiologic monitoring, laboratory values, microbiology results, diagnostic imaging, procedural results, and scoring systems (e.g., RASS, CAM-ICU).
  o Pharmacogenomics and pharmacogenetic information, if available.

- o Adverse drug reactions.
- o Medication adherence and persistence.
- o Patient lifestyle habits, preferences and beliefs, health and functional goals, and socioeconomic factors that affect access to medications and other aspects of care.
- Sources of information are the most reliable sources available, including electronic, face-to-face, and others.
- Recording system is functional for subsequent problem solving and decision making.
- Clarifies information as needed.
- Displays understanding of limitations of information in health records.
- Poses appropriate questions as needed.

Objective R1.1.4: (Analyzing) Analyze and assess information on which to base safe and effective medication therapy for patients with cardiovascular diseases.

Criteria:

- Includes accurate assessment of patients':
  - o Health and functional status.
  - o Risk factors.
  - o Health data.
  - o Cultural factors.
  - o Health literacy.
  - o Access to medications.
  - o Immunization status.
  - o Need for preventive care and other services, when appropriate.
  - o Other aspects of care, as applicable.
- Identifies medication therapy problems, including:
  - o Lack of indication for medication.
  - o Medical conditions for which there is no medication prescribed.
  - o Medication prescribed or continued inappropriately for a particular medical condition.
  - o Suboptimal medication regimen (e.g., dose, dosage form, duration, schedule, route of administration, method of administration).
  - o Medication toxicity requiring medication therapy modifications.
  - o Abnormal lab values requiring medication therapy modifications.
  - o Therapeutic duplication.
  - o Adverse drug or device-related events or the potential for such events.
  - o Clinically significant drug–drug, drug–disease, drug–nutrient, drug–DNA test interaction, drug–laboratory test interaction, or the potential for such interactions.
  - o Use of harmful social, recreational, nonprescription, nontraditional, or other medication therapies.
  - o Patient not receiving full benefit of prescribed medication therapy.
  - o Problems arising from the financial impact of medication therapy on the patient.
  - o Patient lacks understanding of medication therapy.
  - o Patient not adhering to medication regimen and root cause (e.g., knowledge, recall, motivation, financial, system).
  - o Patient assessment needed.
  - o Discrepancy between prescribed medications and established care plan for the patient.
- Prioritize health care needs of patients with cardiovascular diseases.

Objective R1.1.5: (Creating) Design, or redesign, safe and effective patient-centered therapeutic regimens and monitoring plans (care plans) for patients with cardiovascular diseases.

- Criteria: Specify evidence-based, measurable, achievable therapeutic goals that include consideration of:
  - Relevant patient-specific information, including culture and preferences.
  - The goals of other interprofessional team members.
  - The patient's disease state(s).
  - Medication-specific information.
  - Best evidence, including clinical guidelines and the most recent literature
  - Effective interpretation of literature for application to patient care
  - Ethical issues involved in the patient's care.
  - Quality-of-life issues specific to the patient.
  - End of life issues, when needed.
  - Integration of all the above factors influencing the setting of goals.
- Designs/redesigns regimens that:
  - Are appropriate for the disease states being treated.
  - Reflect:
    - Clinical experience.
    - The therapeutic goals established for the patient.
    - The patient's and caregiver's specific needs.

    Consideration of:
      - Any pertinent pharmacogenomic or pharmacogenetic factors.
      - Any pertinent pharmacokinetic or pharmacodynamics factors
      - Best evidence.
      - Pertinent ethical issues.
      - Pharmacoeconomic components (patient, medical, and systems resources).
      - Patient preferences, culture, and/or language differences.
      - Patient-specific factors, including physical, mental, emotional, and financial factors that might impact adherence to the regimen.
      - Drug shortages.
  - Adhere to the health system's medication-use policies.
  - Follow applicable ethical standards.
  - Address wellness promotion and lifestyle modification.
  - Support the organization's or patient's insurance formulary.
  - Address medication-related problems and optimize medication therapy.
  - Engage the patient through education, empowerment, and promotion of self-management.
- Designs/redesigns monitoring plans that:
  - Effectively evaluate achievement of therapeutic goals.
  - Ensure adequate, appropriate, and timely follow-up.
  - Establish parameters that are appropriate measures of therapeutic goal achievement.
  - Reflect consideration of best evidence.
  - Select the most reliable source for each parameter measurement.
  - Have appropriate value ranges selected for the patient.
  - Have parameters that measure efficacy.
  - Have parameters that measure potential adverse drug events.
  - Have parameters that are cost-effective.
  - Have obtainable measurements of the parameters specified.

- o Reflects consideration of compliance.
- o Anticipates future drug-related problems.
- o When applicable, reflects preferences and needs of the patient.
- o Plan represents the highest level of patient care.

Objective R1.1.6: (Applying) Ensure implementation of therapeutic regimens and monitoring plans (care plans) for patients with cardiovascular diseases by taking appropriate follow-up actions.
Criteria:
- Effectively recommends or communicates patients' regimens and associated monitoring plans to relevant members of the health care team including the following activities:
  - o Poses appropriate questions as needed.
  - o Recommendation is persuasive.
  - o Presentation of recommendation accords patients' right to refuse treatment.
  - o If patient or medical team refuses to accept a medical recommendation, pharmacist exhibits responsible professional behavior.
  - o Creates an atmosphere of collaboration.
  - o Skillfully defuses negative reactions.
  - o Communication conveys expertise.
  - o Communication is assertive but not aggressive.
  - o Where the patient has been directly involved in the design of the plans, communication reflects previous collaboration appropriately.
- Ensures recommended plan is implemented effectively for the patient, including ensuring that the:
  - o Plan represents the highest level of patient care.
  - o Therapy corresponds with the recommended regimen.
  - o Regimen is initiated at the appropriate time.
  - o Patient receives their medication as directed.
  - o Medications in situations requiring immediacy are effectively facilitated.
  - o Medication orders are clear and concise.
  - o Activity complies with the health system's policies and procedures.
  - o Tests correspond with the recommended monitoring plan.
  - o Tests are ordered and performed at the appropriate time.
- Takes appropriate action based on analysis of monitoring results (redesign regimen and/or monitoring plan if needed).
- Appropriately initiates, modifies, discontinues, or administers medication therapy as authorized.
- Responds appropriately to notifications and alerts in electronic medical records and other information systems that support medication ordering processes (based on factors such as patient weight, age, gender, comorbid conditions, drug interactions, renal function, and hepatic function).
- Provides thorough and accurate education to patients and caregivers, when appropriate, including information on medication therapy, adverse effects, compliance, appropriate use, handling, and medication administration.
- Addresses medication- and health-related problems and engages in preventive care strategies, including vaccine administration.
- Schedules follow-up care as needed to achieve goals of therapy.

Objective R1.1.7: (Applying) For patients with cardiovascular diseases, document direct patient care activities appropriately in the medical record, or where appropriate.
Criteria:

- Accurately and concisely communicates drug therapy recommendations to healthcare professionals representing different disciplines.
- Appropriately documents patient/caregiver communication and all relevant direct patient care activities in a timely manner.

Objective R1.1.8: (Applying) Demonstrate responsibility for patient outcomes for patients with cardiovascular diseases.
Criteria:
- Gives priority to patient care activities.
- Routinely ensures all steps of the medication management process.
- Assumes responsibility for medication therapy outcomes.
- Actively works to identify the potential for significant medication-related problems.
- Actively pursues all significant existing and potential medication-related problems until satisfactory resolution is obtained.
- Communicates with patients and family members/caregivers about their medication therapy.
- Determines barriers to patient compliance and makes appropriate adjustments.

Goal R1.2: Ensure continuity of care for patients with cardiovascular diseases during transitions between care settings.

Objective R1.2.1: (Applying) Facilitate transitions of care effectively for patients with cardiovascular diseases.
Criteria:
- Participates in thorough medication reconciliation when necessary.
  Identifies and resolves identified drug-related problems, additional monitoring, and education in a timely and caring manner.
- Provides accurate, pertinent, and timely follow-up information when patients transfer to another facility, level of care, pharmacist, or provider, as appropriate.
- Takes appropriate and effective steps to help avoid unnecessary hospital admissions and/or readmissions.
- Provides appropriate information to other pharmacists in transitions to mitigate medication therapy problems.
- Communicates relevant patient information to providers assuming care of the patient.

Competency Area R2: Advancing Practice and Improving Systems of Care

Goal R2.1: Demonstrate ability to manage formulary and medication-use processes for patients with cardiovascular diseases, as applicable to the organization.

Objective R2.1.1: (Creating) Prepare or revise a drug class review, monograph, treatment guideline, or protocol related to care of patients with cardiovascular diseases.
Criteria:
- Displays objectivity.
- Effectively synthesizes information from the available literature.

- Applies evidenced-based principles.
- Consults relevant sources.
- Considers medication-use safety and resource utilization.
- Uses the appropriate format.
- Effectively communicates any changes in medication formulary, medication usage, or other procedures to appropriate parties.
- Demonstrates appropriate assertiveness and timeliness in presenting pharmacy concerns, solutions, and interests to internal and external stakeholders.
- When appropriate, may include proposals for medication-safety technology improvements.

Objective R2.1.2: (Applying) Participate in medication event reporting and monitoring related to care for patients with cardiovascular diseases.
Criteria:
- Effectively uses currently available technology and automation that supports a safe medication-use process.
- Appropriately and accurately determines, investigates, reports, tracks, and trends adverse drug events, medication errors, and efficacy concerns using accepted institutional resources and programs.

Objective 2.1.3: (Analyzing) Identify opportunities for medication-use system improvements related to care for patients with cardiovascular diseases.
Criteria:
- Evaluates data generated by health information technology or automated systems to identify opportunities for improvement (e.g. core measure data, INR data, readmission data, inpatient blood sugar data, medication safety data, adverse medication data, etc).
- Identifies problems and opportunities for improvement and analyzes relevant background data.
- Utilizes best practices to identify opportunities for improvements.
- When needed, makes medication-use policy recommendations based on a review of practice standards, guidelines, and other evidence (e.g., National Quality Measures, Institute for Safe Medication Practices alerts, Joint Commission sentinel alerts.)

Goal R2.2: Demonstrate ability to conduct a quality improvement or research project related to the care of patients with cardiovascular diseases.

Ideally, objectives R2.2.1-R2.2.6 will be addressed through residents working on one quality improvement or research project; however, if this is not possible, all objectives must be addressed by the end of the residency year and can be addressed through work on more than one initiative.

Objective R2.2.1: (Analyzing) Identify, and/or demonstrate understanding of, a quality improvement project or research project.
Criteria:
- Appropriately identifies or understands problems and opportunities for improvement or research projects.
- Conducts a comprehensive literature search and draws appropriate conclusions.

- Determines an appropriate research question or topic for a practice-related project of significance to patient care that can realistically be addressed in the desired time frame.
- Uses best practices or evidence-based principles to identify opportunities for improvements.
- Accurately evaluates or assists in the evaluation of data generated by health information technology or automated systems to identify opportunities for improvement.

Objective R2.2.2: (Creating) Develop a plan or research protocol for the project.
Criteria:
- Develops specific aims, selects an appropriate study design, and develops study methods to answer the research question(s).
- Applies safety design practices (e.g., standardization, simplification, human factors training, lean principles, FOCUS-PDCA, other process improvement or research methodologies) appropriately and accurately.
- Plan for improvement includes appropriate reviews and approvals required by department or organization and addresses the concerns of all stakeholders.
- Applies evidence-based and/or basic pharmacoeconomic principles, if needed.
- Develops a feasible design for a prospective or retrospective clinical or outcomes analysis project that considers who or what will be affected by the project.
- Identifies and obtains necessary approvals and resources (e.g., IRB, quality review board, funding) and responds promptly to feedback or reviews for a practice-related project.
- Acts in accordance with the ethics of research on human subjects, if applicable.
- Implements the project as specified in its design.
- Plan design is practical to implement and is expected to remedy or minimize the identified challenge or deficiency.

Objective R2.2.3: (Evaluating) Collect and evaluate data for the project.
Criteria:
- Collects the appropriate types of data as required by project design.
- Uses appropriate electronic data and information from internal information databases, external online databases, appropriate Internet resources, and other sources of decision support, as applicable.
- Uses appropriate methods for analyzing data.
- Develops and follows an appropriate research or project timeline.
- Correctly identifies need for additional modifications or changes to the project.
- Applies results of a prospective or retrospective clinical, humanistic, and/or economic outcomes analysis to internal business decisions and modifications to a customer's formulary or benefit design as appropriate.
- Uses continuous quality improvement (CQI) principles to assess the success of the implemented change, if applicable.
- Considers the impact of the limitations of the project or research design on the interpretation of results.
- Accurately and appropriately develops plan to address opportunities for additional changes.

Objective 2.2.4: (Applying) Implement the project.
Criteria:

- Plan is based on appropriate data.
- Effectively presents plan (e.g., accurately recommends or contributes to recommendation for operational change, formulary addition or deletion, implementation of medication guideline or restriction, treatment protocol implementation) to appropriate audience.
- Demonstrates appropriate assertiveness in presenting pharmacy concerns, solutions, and interests to external stakeholders.
- Gains necessary commitment and approval for implementation.
- Follows established timeline and milestones.
- Effectively communicates any changes in medication formulary, medication usage, or other procedures to appropriate parties.
- Outcome of change is evaluated accurately and fully.

Objective R2.2.5: (Evaluating) Assess project results and the need to make changes, if applicable.
Criteria:
- Evaluate data and/or outcome of project accurately and fully.
- Includes operational, clinical, economic, and humanistic outcomes of patient care, if applicable.
- Uses continuous quality improvement (CQI) principles to assess the success of the implemented change, if applicable.
- Correctly identifies need for additional modifications or changes based on outcome.
- Accurately assesses the impact of the project, including its sustainability (if applicable).
- Accurately and appropriately develops plan to address opportunities for additional changes.

Objective R2.2.6: (Creating) Effectively present the results of a cardiovascular diseases-related project.
(The presentation can be virtual.)
Criteria:
- Outcome of change is reported accurately to appropriate stakeholders(s) and policy-making bodies according to departmental or organizational processes.
- Report includes implications for changes to or improvement in pharmacy practice.
- Oral presentations to appropriate audiences within the department and organization or to external audiences use effective communication and presentation skills and tools (e.g., handouts, slides) to convey points successfully.

Objective R2.2.7: (Creating) Use correct grammar, punctuation, spelling, style, and formatting conventions to prepare a written summary of a cardiovascular diseases-related project.
Criteria:
- Uses manuscript style appropriate to the project.
- Creates a written summary of the project that is suitable for publication.
- Demonstrates the ability to effectively critique one's own, and other's scholarly work (perform peer review).
- Report uses an accepted manuscript style suitable for publication in the professional literature.

Competency Area R3: Leadership and Management

Goal R3.1: Demonstrate leadership skills and successful self-development.

Objective R3.1.1: (Applying) Demonstrate personal, interpersonal, and teamwork skills critical for effective leadership.
Criteria:
- Demonstrates efficient time management.
- Manages conflict effectively.
- Demonstrates effective negotiation skills.
- Demonstrates ability to lead interprofessional teams.
- Uses effective communication skills and styles.
- Demonstrates understanding of perspectives of various health care professionals.
- Effectively participates in patient care related services, including interprofessional teams, code blue, and rapid response teams.

Objective R3.1.2: (Applying) Apply a process of ongoing self-evaluation and personal performance improvement.
Criteria:
- Accurately summarizes own strengths and areas for improvement (e.g., in knowledge, values, qualities, skills, and behaviors).
- Effectively uses a self-evaluation process for developing professional direction, goals, and plans.
- Effectively engages in self-evaluation of progress on specified goals and plans.
- Demonstrates ability to use and incorporate constructive feedback from others.
- Effectively uses principles of continuous professional development (CPD) planning (reflect, plan, act, evaluate, record/review)
- Effectively expresses benefits of personal profession-wide leadership and advocacy (e.g., involvement in professional pharmacy and/or cardiology societies, community service and/or volunteerism, etc.).
- Review and interpret the most recent primary literature.
- Demonstrates pride in and commitment to the profession through appearance, personal conduct, planning to pursue board certification.

Goal R3.2: Demonstrate management skills in the provision of care for patients with cardiovascular diseases.

Objective R3.2.1: (Applying) Contribute to pharmacy departmental management of issues related to the care of patients with cardiovascular disease.
Criteria:
- Participates effectively on multidisciplinary committees or informal work groups to complete group projects, tasks, or goals.
- Participates effectively in implementing changes, using change management and quality improvement best practices and tools, consistent with team, departmental, and organizational goals.
- Works collaboratively within the organization's political and decision-making structure.

Objective R3.2.2: (Applying) Manage one's own cardiovascular diseases practice effectively.
Criteria:
- Evaluate clinical practice activities for potential contributions to scholarship
- Accurately assesses successes and areas for improvement (e.g., a need for staffing projects or education) in managing one's own practice.
- Makes accurate, criteria-based assessments of one's own ability to perform practice tasks.
- Regularly integrates new learning into subsequent performances of a task until expectations are met.
- Routinely seeks applicable learning opportunities when performance does not meet expectations.
- Demonstrates effective workload and time-management skills.
- Assumes responsibility for personal work quality and improvement.
- Is well prepared to fulfill responsibilities (e.g., patient care, projects, management, meetings, effectively critique one's own and other's scholarly work (perform peer review).
- Sets and meets realistic goals and timelines.
- Strives to maintain a healthy work–life balance.
- Demonstrates adaptability to practice needs.

Competency Area R4: Teaching, Education, and Dissemination of Knowledge

Goal R4.1: Provide effective medication and practice-related education to patients with cardiovascular diseases, caregivers, health care professionals, students, and the public (individuals and groups).

Objective R4.1.1: (Applying) Design effective educational activities related to cardiovascular diseases.
Criteria:
- Accurately defines educational needs, including learning styles, with regard to target audience (e.g., individual versus group) and learning level (e.g., health care professional versus patient, student versus PGY1 resident).
- Selects topics of significance to cardiovascular diseases pharmacy as outlined in the appendix.
- Defines educational objectives that are specific, measurable, at a relevant learning level (e.g., applying, creating, evaluating), and address the audiences' defined learning needs.
- Plans use of teaching strategies that match learner needs, including active learning (e.g., patient cases, polling).
- Selects content that is relevant, thorough, evidence based (using primary literature where appropriate), timely, and reflects best practices.
- Includes accurate citations and relevant references, and adheres to applicable copyright laws.

Objective R4.1.2: (Applying) Use effective presentation and teaching skills to deliver education related to cardiovascular diseases.
Criteria:
- Demonstrates rapport with learners.
- Captures and maintains learner/audience interest throughout the presentation.
- Implements planned teaching strategies effectively.
- Effectively facilitates audience participation, active learning, and engagement in various settings (e.g., small or large group, distance learning).

- Presents at appropriate rate and volume and without exhibiting poor speaker habits (e.g., excessive use of "um" and other interjections).
- Body language, movement, and expressions enhance presentations.
- Summarizes important points at appropriate times throughout presentations.
- Transitions smoothly between concepts.
- Effectively uses audio-visual aids and handouts to support learning activities.

Objective R4.1.3: (Applying) Use effective written communication to disseminate knowledge related to cardiovascular diseases.
Criteria:
- Writes in a manner that is easily understandable and free of errors.
- Demonstrates thorough understanding of the topic.
- Notes appropriate citations and references.
- Includes critical evaluation of the literature and knowledge advancements or a summary of what is currently known on the topic.
- Develops and uses tables, graphs, and figures to enhance readers' understanding of the topic when appropriate.
- Writes at a level appropriate for the target readership (e.g., physicians, pharmacists, other health care professionals, patients, the public).
- Creates one's own work and does not engage in plagiarism.

Objective R4.1.4: (Applying) Appropriately assess effectiveness of education related to cardiovascular diseases.
Criteria:
- Selects assessment method (e.g., written or verbal assessment or self-assessment questions, case with case-based questions, learner demonstration of new skill) that matches activity.
- Provides timely, constructive, and criteria-based feedback to learner.
- If used, assessment questions are written in a clear, concise format that reflects best practices for test item construction.
- Determines how well learning objectives were met.
- Plans for follow-up educational activities to enhance or support learning and (if applicable) ensure that goals were met.
- Identifies ways to improve education-related skills.
- Obtains, reviews, and applies feedback from learners and others to improve effectiveness as an educator.

Goal R4.2: Effectively employ appropriate preceptor roles when engaged in teaching students, pharmacy technicians, or fellow health care professionals in cardiovascular diseases.

Objective R4.2.1: (Analyzing) When engaged in teaching related to cardiovascular diseases, select a preceptor role that meets learners' educational needs.
Criteria:
- Identifies which preceptor role is applicable for the situation (direct instruction, modeling, coaching, facilitating) as follows:
  - Selects direct instruction when learners need background content.

- o Selects modeling when learners have sufficient background knowledge to understand the skill being modeled.
- o Selects coaching when learners are prepared to perform a skill under supervision.
- o Selects facilitating when learners have performed a skill satisfactorily under supervision.

Objective R4.2.2: (Applying) Effectively employ preceptor roles, as appropriate, when instructing, modeling, coaching, or facilitating skills related to cardiovascular diseases.
Criteria:
- Accurately assesses the learner's skill level to determine the appropriate preceptor role for providing practice-based teaching.
- Instructs students, technicians, or others as appropriate.
- Models skills, including "thinking out loud," so learners can "observe" critical-thinking skills.
- Coaches, including effective use of verbal guidance, feedback, and questioning, as needed.
- Facilitates, when appropriate, by allowing learner independence and using indirect monitoring of performance.

Competency Area R5: Management of Cardiovascular (ACLS) Medical Emergencies

Goal R5.1: Demonstrate understanding of the management of cardiovascular (ACLS) medical emergencies.

Objective R5.1.1: (Applying) Demonstrate understanding of the management of cardiovascular diseases medical emergencies according to the organization's policies and procedures.
Criteria:
- Obtains certification (or training) in the ACLS or equivalent.
- Acts in accordance with the organization's policies and procedures for medical emergencies.
- Applies appropriate medication therapy in medical emergency situations.
- Prepares, or demonstrates understanding of how to prepare, medications and calculates doses during a medical emergency.
- Effectively anticipates needs during a medical emergency.

ELECTIVE COMPETENCY AREAS, GOALS, AND OBJECTIVES FOR POSTGRADUATE YEAR TWO (PGY2) CARDIOVASCULAR DISEASES PHARMACY RESIDENCIES

Competency Area E1: Academia

Goal E1.1: Demonstrate understanding of key elements of the academic environment and faculty roles within it.

Objective E1.1.1: (Understanding) Demonstrates understanding of key elements of the academic environment and faculty roles within it.

Criteria:
- Accurately describes expectations of public and private schools of pharmacy for teaching, practice, research, and service.
- Demonstrates understanding of relationships between scholarly activity and teaching, practice, research and service.
- Accurately describes the academic environment (e.g., how administration decisions and outside forces impact faculty).
- Accurately describes faculty roles and responsibilities.
- Accurately describes the types and ranks of faculty appointments.
- Demonstrates understanding of the role and implications of part-time and adjunct faculty
- Accurately describes the complexity of the promotion and/or tenure process.
- Accurately explains the role and influence of faculty in the academic environment.
- Accurately identifies resources available to help develop academic skills.
- Accurately identifies and describes ways that faculty maintain balance in their roles.
- Accurately describes typical affiliation agreements between a college of pharmacy and a practice site (e.g., health system, hospital, clinic, retail pharmacy).

Goal E1.2: Exercise case-based and other teaching skills essential to pharmacy faculty.

Objective E1.2.1: (Applying) Develop and deliver cases for workshops and exercises for laboratory experiences.

Criteria:
- Identifies the appropriate level of case-based teachings for small group instruction.
- Identifies appropriate exercises for laboratory experiences.
- Provides appropriate and timely feedback to improve performance.

Objective E1.2.2: (Evaluating) Compare and contrast methods to prevent and respond to academic and profession dishonesty and adhere to copyright laws.

Criteria:
- Accurately evaluates physical and attitudinal methods to prevent academic dishonesty.
- Accurately describes methods of responding to incidents of academic dishonesty.
- Accurately explains the role of academic honor committees in cases of academic dishonesty.

- Identifies examples and methods to address unprofessional behavior in learners.
- Accurately describes copyright regulations as related to reproducing materials for teaching purposes.
- Accurately describes copyright regulations as related to linking and citing on-line materials.

Goal E1.3: Develops and practices a philosophy of teaching.

Objective E1.3.1: (Creating) Develop or update a teaching philosophy statement.
Criteria:
- Teaching philosophy includes:
  - self-reflection on personal beliefs about teaching and learning;
  - identification of attitudes, values, and beliefs about teaching and learning; and,
  - illustrates personal beliefs on practice and how these beliefs and experiences are incorporated in a classroom or experiential setting with trainees.
  - If updating, reflect on how one's philosophy has changed.

Objective E1.3.2: (Creating) Prepare a practice-based teaching activity.
Criteria:
- Develops learning objectives using active verbs and measureable outcomes.
- Plans teaching strategies appropriate for the learning objectives.
- Uses materials that are appropriate for the target audience.
- Organizes teaching materials logically.
- Plans relevant assessment techniques.
- When used, develops examination questions that are logical, well-written, and test the learners' knowledge rather than their test-taking abilities.
- Participates in a systematic evaluation of assessment strategies (e.g., post-exam statistical analysis) when appropriate.
- Ensures activity is consistent with learning objectives in course syllabus.

Objective E1.3.3: (Applying) Deliver a practice-based educational activity, including didactic or experiential teaching, or facilitation.
Criteria:
- Incorporates at least one active learning strategy in didactic experiences appropriate for the topic.
- Uses effective skills in facilitating small and large groups.
- Development of experiential activities include the following:
  - Organizes student activities (e.g., student calendar);
  - Effectively facilitates topic discussions and learning activities within the allotted time;
  - Effectively develops and evaluates learner assignments (e.g., journal clubs, presentations, SOAP notes;
  - Effectively assesses student performance; and,
  - Provides constructive feedback.

Objective E1.3.4: (Creating) Effectively document one's teaching philosophy, skills, and experiences in a teaching portfolio.
Criteria:

- Portfolio includes:
  - A statement describing one's teaching philosophy;
  - Curriculum vitae;
  - Teaching materials including slides and other handouts for each teaching experience;
  - Documented self-reflections on one's teaching experiences and skills, including strengths, areas for improvement, and plans for working on the areas for improvement;
  - Peer/faculty evaluations; and,
  - Student/learner evaluations.

Competency Area E2: Initiating a Cardiovascular Diseases-Related Service

Goal E2.1: Develop a proposal for a new cardiovascular diseases-related service.

Objective E2.1.1: (Creating) Write a proposal for a cardiovascular diseases-related service.
Criteria:
- Proposal meets a perceived need of the health system and its patients.
- Accurately identifies the need for a new service or program, or improvements to an existing service or program.
- Goals are realistic and clear.
- Outcomes are stated in measurable terms.
- Proposal is clear and persuasive.
- The proposal uses the organization's format.
- Marketability of new or enhanced service is clearly outlined.
- Uses appropriate methods (e.g., modeling) to predict the financial outcome(s) of implementing a proposed new or enhanced service or program.
- Uses appropriate methods to predict the intended clinical outcomes of new or enhanced service or program.
- Proposal includes the necessary components of a new service or program (e.g., disease state management program).
- Proposal considers the role of other health care providers in meeting the needs of patients involved in a new service or program (e.g., disease state management programs).
- Proposal considers how potential shifts in market share should be factored into decisions on the marketability of a service or program.

Objective E2.1.2: (Creating) Present a proposal for a new cardiovascular diseases-related service.
Criteria:
- Identifies appropriate concerned entities as audience for presentation.
- Uses effective presentation skills.

Objective E2.1.3: (Applying) Implement a new cardiovascular diseases-related service.
Criteria:
- Identifies appropriate strategies for implementing the new service.
- Effectively employs selected strategies for implementing the new service.

Objective E2.1.4: (Applying) Appraise a new cardiovascular diseases pharmacy service.
Criteria:

- Accurately evaluates adequacy of the new service in meeting the stated goals.

Competency Area E3: Cardiology Credentialing

Goal E3.1: Successfully petition for credentialing as a cardiology pharmacy practitioner.

Objective E3.1.1: (Applying) Follow established procedures to successfully apply (may be a hypothetical application if not permitted at the site) for credentialing as a cardiology pharmacy practitioner.
Criteria:
- Follows established procedures to successfully apply for credentialing.
- Demonstrates understanding of the practice setting's policy for applying to be credentialed.

Competency Area E4: Outcomes Research

Goal E4.1: Contribute to cardiovascular diseases clinical, humanistic and economic outcomes analyses.

Objective E4.1.1: (Evaluating) Contribute to a cardiovascular diseases prospective clinical, humanistic and/or economic outcomes analysis.
Criteria:

- Follows, or explains, principles and methodology of basic pharmacoeconomic analyses.
- Selects, or explains, study design appropriate for their research (e.g., prospective clinical, humanistic or economic outcomes analysis).
- Appropriately uses modeling, if appropriate, or explains how modeling is used.
- Effectively collects data for their research or explains the types of data that must be collected in a prospective clinical, humanistic, and economic outcomes analysis.
- Uses, or explains, reliable sources of data for a clinical, humanistic, and economic outcomes analysis.
- Effectively analyzes, or explains how to analyze, collected data in a prospective clinical, humanistic, and economic outcomes analysis.
- Applies, or explain how research results can be applied, to internal business decisions including modifications to a customer's formulary or benefit design.

Objective E4.1.2: (Evaluating) Contribute to a cardiovascular diseases retrospective clinical, humanistic, and/or economic outcomes analysis.

Criteria:
- Accurately explains the purpose of a retrospective clinical, humanistic or economic outcomes analysis.
- Accurately uses or explains study designs appropriate for a retrospective clinical, humanistic, and economic outcomes analysis.

- Collects appropriate data, or accurately explains the types of data that must be collected, in a retrospective clinical, humanistic, and economic outcomes analysis, as applicable.
- Utilizes appropriate report and audit information, or accurately explains the content and utilization of reports and audits, produced by the pharmacy department, as applicable.
- Accurately uses or explains the types of data that must be collected in a retrospective clinical, humanistic, and economic outcomes analysis.
- Accurately uses or explains the content and utilization of reports and audits produced by the pharmacy department.
- Accurately uses or explains possible reliable sources of data for a retrospective clinical, humanistic, and economic outcomes analysis.
- Accurately uses or explains methods for analyzing data in a retrospective clinical, humanistic, and economic outcomes analysis.
- Accurately explains the impact of limitations of retrospective data on the interpretation of results.
- Effectively applies, or explains how, results of a retrospective clinical, humanistic, and economic outcome analysis can be applied to internal business decisions including modifications to a customer's formulary or benefit design, as applicable.

Competency Area E5: Delivery of Medications

Goal E5.1: Manage and facilitate delivery of medications to support safe and effective drug therapy for patients with cardiovascular diseases.

Objective E5.1.1: (Applying) Facilitate delivery of medications for patients with cardiovascular diseases following best practices and local organization policies and procedures.
Criteria:
- Correctly interprets appropriateness of a medication order before preparing or permitting the distribution of the first dose, including:
  o Identifying, clarifying, verifying, and correcting any medication order errors.
  o Considering complete patient-specific information.
  o Identifying existing or potential drug therapy problems.
  o Determining an appropriate solution to an identified problem.
  o Securing consensus from the prescriber for modifications to therapy.
  o Ensuring that the solution is implemented.
- Prepares medication using appropriate techniques and following the organization's policies and procedures and applicable professional standards, including:
  o When required, accurately calibrating equipment.
  o Ensures intravenous solutions are appropriately concentrated, without incompatibilities; stable; and appropriately stored.
  o Adhering to appropriate safety and quality assurance practices.
  o Preparing labels that conform to the health system's policies and procedures, as appropriate.
  o Ensuring that medication has all necessary and appropriate ancillary labels.
  o Inspecting the final medication before dispensing for accuracy, as appropriate.
  o When dispensing medication products:
  o Follows the organization's policies and procedures.
  o Ensures the patient receives the medication(s) as ordered.
  o Ensures the integrity of medication dispensed.

- o Provides any necessary written and/or verbal counseling for the patient and support/education for relevant interdisciplinary staff (e.g. nursing, respiratory therapy).
  - o Ensures the patient receives medication on time.
  - o Maintains accuracy and confidentiality of patients' protected health information.
  - o Obtains agreement on modifications to medication orders when acting in the absence of, or outside, an approved protocol or collaborative agreement.
  - o Ensures appropriate dosing, preparation, and dispensing the following types of medications:
    - Blood factor products
    - Anticoagulant reversal agents
    - Medications used in emergency response, cardiac arrest, stroke response
- Assesses appropriate stock of automatic dispensing cabinets
- References appropriate literature resources to ensure use of proper practices regarding compatibility, fluid overload, and concentrations.

Objective E5.1.2: (Applying) Manage aspects of the medication-use process related to formulary management for patients with cardiovascular diseases.
Criteria:
- Follows appropriate procedures regarding exceptions to the formulary, if applicable, in compliance with policy.
- Ensures non-formulary medications are evaluated, dispensed, administered, and monitored in a manner that ensures patient safety.

Objective E5.1.3: (Applying) Facilitate aspects of the medication-use process for patients with cardiovascular diseases.
Criteria:
- Makes effective use of technology to aid in decision-making and increase safety.
- Demonstrates commitment to medication safety.
- Effectively prioritizes workload and organizes workflow.
- Checks accuracy of medications dispensed, including correct patient identification, medication, dosage form, label, dose, number of doses, and expiration dates; and proper repackaging and relabeling medications, including compounded medications (sterile and nonsterile).
- Promotes safe and effective drug use on a day-to-day basis.

Competency Area E6: Medication-Use Evaluations

Goal E6:1: (Evaluating) Lead a medication-use evaluation related to care of patients with cardiovascular diseases.

Objective E6.1.2: (Evaluating) Lead a medication-use evaluation related to care for patients with cardiovascular diseases. (Guidance: This should not be the major project but may be part of the project.)
- Uses evidence-based principles to develop criteria for use.
- Demonstrates a systematic approach to gathering data.
- Accurately analyzes data gathered.
- Demonstrates appropriate confidence and assertiveness in presenting pharmacy concerns, solutions, and interests to internal and external stakeholders.

- Implements approved changes, as applicable.

The effective date for implementation of these competency areas, goals and objectives is commencing with the entering resident class of 2017.

Appendix

Didactic discussions, reading assignments, case presentations, written assignments, or direct patient care experience will allow the cardiology pharmacy resident to understand and appreciate the implications of the areas of emphasis in the following table. This list is not meant to be an all-inclusive list of cardiovascular conditions that may be covered, but is meant to reflect content that would provide an adequate foundation for a graduate of a pharmacy residency in cardiology.

In addition, frequently, patients require treatment for not only their cardiovascular disease but also for concurrent medical and surgical problems. Comprehensive care of these patients includes the full scope of their pharmacotherapeutic needs. As a consequence, residents will develop expertise in pharmacotherapy of typical chronic/acute medical and surgical problems occurring in patients with cardiovascular disease, and in promoting wellness and the prevention of cardiovascular disease.

"**Required patient experience"** identify those disorders/topic areas where the resident must have direct patient care experience. Topics in the **"Required case-based or topic discussion"** column indicate areas where the resident must have EITHER direct patient care experience OR demonstrate knowledge through a case-based or topic discussion. Topics in the "**Elective patient experience and/or case-based or topic discussion"** column are common in patients with cardiovascular disease and suggested for discussion, but can be considered optional.

Programs should track progress on the topic areas throughout the residency year.

Topic areas	Required patient experience	Required case-based or topic discussion approach acceptable	Elective patient experience and/or case-based or topic discussion
Cardiovascular Risk reduction	Dyslipidemias Hypertension		Women's health Smoking and substance abuse cessation Diabetes Risk reduction in patients with HIV/AIDS
Atherosclerotic disease	Atherosclerosis Acute coronary syndromes (STEMI/NSTEMI/USA) Cardiovascular testing (ECHO, nuclear stress test, exercise and pharmacologic stress tests) Chronic coronary artery disease Percutaneous coronary intervention	Quality measures Peripheral arterial disease Cerebrovascular disease	
Dysrhythmias	Atrial arrhythmias Drug induced QT prolongation EKG monitoring Ventricular arrhythmias		Congenital QT prolongation
Heart failure	Acute decompensated heart failure Cardiogenic shock Cardiorenal syndrome Stable HFrEF/HFpEF Drug induced Cardiomyopathies	Cardiac transplantation Quality Measures	Cardiomyopathies Myocarditis Amyloidosis Sarcoidosis
Cardiothoracic surgery related	Aortic dissection Aortic stenosis Endocarditis Valvular diseases (AVR, MVR) Revascularization – CABG	TAVR, TMVR ECMO	Congenital heart defects ASD, VSD Tetralogy of Fallot Coarctation Transposition of the great vessels Pericardial window Treatment of Afib (MAZE, Convergent)
Cardiac Critical Care	Advanced cardiac life support Hypertensive urgency/emergencies Vasopressors/inotropes	Hypothermia Intravascular hemodynamic monitoring devices (e.g., Swan Ganz)	Sedation/analgesia/delirium Acid/Base disorders Palliative care
Anticoagulation and antiplatelets	Prevention and Treatment of thromboembolic disease (VTE, PE, embolic) Hemorrhagic complications Monitoring Thrombolytics HIT	Hemostasis	Hypercoagulable states Cancer Pregnancy DIC

Devices	Intra aortic balloon pump Pacemakers CRT ICD	Percutaneous left ventricular assist devices LAAO devices Temporary mechanical support devices Implantable monitoring devices RVAD and LVAD	
Other	Pulmonary hypertension Cardiovascular anatomy and physiology	Pericardial diseases Pericarditis/ pericardial effusions	Cardiac tamponade Neonatal/pediatric cardiovascular diseases