

**A Petition to the
Board of Pharmacy Specialties
Requesting Recognition of
Cardiology Pharmacy Practice
as a Specialty**

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American Pharmacists Association (APhA)

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Definition of Cardiology Pharmacy Practice

Cardiology pharmacy practice specializes in the delivery of direct patient care services by pharmacists, as members of interprofessional health care teams, working to ensure safe and effective use of medications in patients with cardiovascular disease. These specialists focus on disease prevention and treatment, including evidence-based medication use and related care that improve both short- and long-term outcomes for patients. Cardiology specialists practice across the spectrum of care, including ambulatory, acute, and intensive care. Pharmacists in this practice review, analyze, and monitor multifaceted clinical information to make reasoned decisions for patients with multiple comorbidities and highly complex medication regimens.

**American College of Clinical Pharmacy (ACCP)
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**A Petition to the Board of Pharmacy Specialties (BPS) Requesting Recognition of
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Executive Summary

Definition of Cardiology Pharmacy Practice

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—ACCP/APhA/ASHP Task Group

Background

By acquiring specialized knowledge and skills and creating a unique practice beyond the scope of pharmacy practice defined by licensure examination, an increasing number of pharmacists have distinguished themselves through the care of patients with cardiovascular disease (CVD) according to the above Definition of Cardiology Pharmacy Practice. In recognition of these efforts, the American College of Clinical Pharmacy (ACCP), the American Pharmacists Association (APhA), and the American Society of Health-System Pharmacists (ASHP) have partnered to develop a petition to the Board of Pharmacy Specialties (BPS) to recognize cardiology pharmacy practice as a specialty.

Petition Overview

CVD is the leading global cause of death, accounting for 17.3 million deaths per year, or one in every three deaths. This number is expected to grow to more than 23.6 million by 2030. In the United States alone, nearly 787,000 people died from heart disease, stroke, and other CVDs in 2011.¹ CVDs claim more lives than all types of cancer combined, and there are currently 85.6 million Americans living with some form of CVD.¹ By 2030, 40.5% of the U.S. population is projected to have some form of CVD and, based on these projections, the direct medical costs

to treat CVD could increase to \$1.48 trillion.² It has also been estimated that almost 5 million years of potential life in people who are younger than 75 years of age are lost annually because of CVD.³

Cardiology clinical pharmacists produce a substantial effect on CVD in a wide variety of roles in inpatient and ambulatory settings, largely through the optimization of drug use, avoidance of adverse drug reactions, and transitional care activities focused on medication reconciliation and patient education. Employers, health professionals, and society need a mechanism for identifying, recognizing, and providing access to pharmacists with the expertise to provide the specialized care required by patients with CVD.

BPS Petition Process

The *BPS Petitioner's Guide for Recognition of a Pharmacy Practice Specialty* outlines seven criteria, each with a list of supporting guidelines, to be addressed in a petition for specialty recognition. The petitioning organizations conducted a comprehensive literature review and examined, in detail, the *BPS Report of the Role Delineation Study of Cardiology Pharmacy* to support the development of this petition. We also conducted a web-based survey of cardiology pharmacists and their employers, the *Survey of Cardiology Pharmacists*, to provide additional, timelier data for the petition. The evidence presented in the petition for each of the BPS criteria is briefly summarized below.

Criterion A: Need

This criterion identifies the public health and patient care needs that are currently unmet by pharmacists in generalized practice, pharmacists practicing in other specialty areas, or other health professionals. The petition establishes how cardiology clinical pharmacists can effectively meet these needs.

According to the published literature, patients with CVD have substantial unmet needs in the areas of adverse drug event and medication error prevention, medication adherence, drug therapy management, individualized dosing, preventive care, and management of chronic diseases. Patients with acute and chronic CVD require pharmacologic management by pharmacists with specialized training, knowledge, and experience in managing cardiac pharmacotherapy. General practice within pharmacy and medicine are often challenged to successfully meet the medication management needs of these patients. For a myriad of reasons, patients with CVD are at higher risk for medication errors, adverse drug events, and other negative consequences of inappropriate medication use. Licensure examinations by state boards of pharmacy evaluate some of the core functions performed by cardiology clinical pharmacists but do so at a generalist level that does not evaluate abilities to manage complex

needs of patients with CVD.⁴ Pharmacists in general practice perform important medication management and patient education functions. However, management of complex cardiology patients frequently requires the advanced knowledge and skills of the specialized practitioner.

BPS certification of cardiology clinical pharmacists will lay the groundwork for committed and interested pharmacists to focus their professional development, training, and educational efforts on preparing themselves to fully meet this public health need.

Criterion B: Demand

The criterion establishes that there exists a significant and clear health demand to provide the necessary public reason for certification. This is demonstrated through employer survey data, assessment of employment opportunities for cardiology clinical pharmacists, and letters and statements by individuals in specific areas within the health care system. Demand is viewed as a willingness and ability to purchase the services of a board certified pharmacist.

Cardiology clinical pharmacists focus on the care of patients with complex and/or advanced CVD. This includes a systematic assessment of a patient's clinical status, evaluation of all medications (including prescription and nonprescription agents and herbal/nutritional supplements), development and implementation of a care plan, follow-up evaluation and medication monitoring, and accurate documentation for the entire process of care. The care process for patients with complex and/or advanced CVD is intricate and unique and requires full engagement with an interprofessional care team. The demand for cardiology clinical pharmacists is demonstrated through sustained growth in employer demand and the increase in specialty training programs. In addition, 10 individuals and organizations contributed letters of support that specifically attest to the demand for pharmacists with training and knowledge to provide specialized services in cardiology practice.

The value of specialty recognition is becoming increasingly important to employers of cardiology pharmacists. The *Survey of Cardiology Pharmacists* included a subset of questions that were completed by individuals with direct responsibility for hiring pharmacists in cardiology practice. Responding employers were asked to provide the total number of full-time equivalents (FTEs) allocated to serving patients with CVD within their organization. Although the number of positions varied greatly (range, 0.33 to 60 allocated FTEs), the average number of FTEs across responding organizations was 6.8. Hiring managers from 86 organizations that responded indicated that they had recruited for 158 cardiology clinical pharmacists over the past 3 years and had filled more than 96% of these positions. These same employers estimate that they will fill an additional 192.5 positions over the next 3 years and currently report 61 vacant positions within their organizations. Employers also estimated the growth in the number

of cardiology pharmacy positions within their organizations over the next 5 years, with 98.9% of respondents indicating an increase in these positions.

Over 70% of employers responding to the *Survey of Cardiology Pharmacists* indicated that it was “highly likely,” “likely,” or “somewhat likely” that they would require a new specialty credential in cardiology if approved by BPS for newly hired pharmacists. Of those responses, over 67% indicated that it was “highly likely,” “likely,” or “somewhat likely” that they would require a new specialty credential in cardiology if approved by BPS for currently employed cardiology pharmacists. The survey also showed that only 36% of cardiology pharmacist positions currently require BPS certification or other earned credential. These results imply that a credential more targeted to the specific needs of cardiology clinical pharmacists would be in demand in the marketplace.

Criterion C: Number and Time

This criterion quantifies that there are a reasonable number of individuals who devote of their practice to cardiology pharmacy practice.

The *Survey of Cardiology Pharmacists* was fielded to 4,660 pharmacists in cardiology pharmacy practice. Individuals were identified through membership records within ACCP, APhA, and ASHP. Of the responding pharmacists, 87% indicated that they are practicing at a specialty level. Based on these survey results and estimates by experts in pharmacy practice, we draw the conclusion that 4,200 to 4,500 pharmacists are currently engaged in specialized cardiology practice. Likely, this survey number is underestimated because not all cardiology clinical pharmacists are members of the partnering professional organizations. However, we believe that pharmacists who are engaged as members of professional associations are more likely than others to pursue specialty recognition.

Cardiology pharmacy practice has significantly grown over the past decade, as evidenced by the increased number of postgraduate year two (PGY2) specialty residency programs in cardiology pharmacy. In 2007, there were six ASHP-accredited specialty residency programs in cardiology. Today, these programs number 30, a 400% increase. Approximately 34 cardiology clinical pharmacists graduate annually from these programs.

Results from the role delineation study show that respondents are highly engaged in cardiology practice, with an average of 75% of their overall work time spent focused on cardiology pharmacy practice. Approximately 55% of practice time was spent providing direct patient care to patients with CVD. The *Survey of Cardiology Pharmacists* also showed that over 86% of respondents, or 657 pharmacists, indicated that they would be “highly likely,” “likely,” or

“somewhat likely” to pursue specialty recognition in cardiology pharmacy practice certification within 5 years if such recognition were made available.

Criterion D: Specialized Knowledge and Criterion E: Specialized Tasks/Skills

These criteria outline the specialized knowledge of one or more of the pharmaceutical sciences and the biological, physical, behavioral, and administrative sciences which underlie them that are required by cardiology clinical pharmacists and represent the specialized tasks/skills of cardiology clinical pharmacists, which are distinct from other BPS-recognized pharmacy specialties.

BPS has conducted a role delineation study for cardiology pharmacy practice and issued a call for petitions in this specialty area. Therefore, Criterion D and Criterion E are not required as part of the petition to BPS.

Criterion F: Education and/or Training

This criterion describes the education, training, and experience required to acquire specialized knowledge and skills to perform the specialized functions and distinguishes from the generalized practitioner and the requirements of initial licensure.

According to the Accreditation Council for Pharmacy Education’s *Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree*, the pharmacy curriculum provides a thorough foundation in the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences. The degree program prepares graduates to:

- Enter advanced pharmacy practice experiences (APPE-ready)
- Provide direct patient care in a variety of health care settings (practice-ready)
- Contribute as a member of an interprofessional collaborative patient care team (team-ready)⁵

Because cardiology is an evolving specialized discipline that frequently employs an interdisciplinary health care team, many cardiology clinical pharmacists have obtained the needed knowledge, skills, and abilities through mechanisms other than structured training programs. As of June 1, 2016, there were 30 PGY2 cardiology specialty residency programs with 38 residency positions. There are also four cardiology pharmacy fellowship programs with eight positions and two graduate degree programs focusing on cardiovascular pharmacotherapy.

Following licensure, pharmacists can acquire the differentiated knowledge and skills required for specialized cardiology pharmacy practice by a variety of methods. These methods may include, but are not limited to:

- Doctor of Pharmacy degree, clinical work experience, and self-study
- Doctor of Pharmacy degree, postgraduate year one (PGY1) residency training, clinical work experience, and self-study
- Doctor of Pharmacy degree, PGY1 residency training, clinical and/or research fellowship programs, clinical work experience, and self-study
- Doctor of Pharmacy degree, PGY1 residency training, PGY2 specialty residency in cardiology, clinical work experience, and self-study

The most effective way to prepare for a career as a cardiology clinical pharmacist is to complete a PGY1 pharmacy residency and a PGY2 residency in cardiology. PGY2 cardiology residency programs provide the most comprehensive experiential learning opportunities in cardiology clinical pharmacy practice.

Criterion G: Transmission of Knowledge

The criterion establishes that there is adequate transmission of specialized knowledge through professional, scientific, and technical literature directly related to specialized cardiology pharmacy practice.

Transmission and dissemination of specialized knowledge in cardiology pharmacy practice occurs through formal networking groups within professional practice associations, peer-reviewed publications and periodicals, live educational programming, and enduring educational resources in print- and web-based vehicles. Professional organizations and networking groups help cardiology clinical pharmacists to provide optimal care by promoting mentorship and expansion of knowledge. Pharmacy and medical practice organizations offer hundreds of hours of live and web-based continuing pharmacy education opportunities related to new developments and issues concerning cardiology pharmacy practice each year that facilitate the dissemination of knowledge and practice excellence. Enduring resources are also available through various methods. A substantial number of articles pertaining to cardiology pharmacy practice are published annually and are detailed within the petition.

Conclusion

The demand for services provided by cardiology clinical pharmacists has grown consistently over the past 20 years and at an increasing rate, especially over the past decade as improving health outcomes and improving medication use for patients with CVD have taken on greater priority within our health care system and society. The specialized knowledge and functions, supported by societal needs and strong demand, are sufficiently unique to support the recognition of cardiology pharmacy practice as a distinct specialty.

References

¹ American Heart Association; American Stroke Association. 2015 Heart Disease and Stroke Statistics Update. Accessed at https://www.heart.org/idc/groups/ahamah-public/@wcm/@sop/@smd/documents/downloadable/ucm_470704.pdf on August 1, 2016.

² Heidenreich PA, Trogon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. *Circulation*. 2011;123(8):933-944.

³ Milano AF. Coronary heart disease and life insurance. *J Insur Med*. 2000;32(3):167-185.

⁴ National Association of Boards of Pharmacy. NAPLEX blueprint. Accessed at <http://www.nabp.net/programs/examination/naplex/naplex-blueprint/> on September 1, 2012.

⁵ Accreditation Council for Pharmacy Education. *Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree*. 2016. Accessed at <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf> on September 19, 2016.

CRITERION A: Need

The area of specialization shall be one for which specifically trained practitioners are needed to fulfill the responsibilities of the profession of pharmacy in improving the health and welfare of the public, which responsibilities may not otherwise be effectively fulfilled. ***This criterion addresses NEED.*** BPS defines NEED as a condition of requiring supply.

Cardiovascular disease (CVD) is the leading global cause of death, accounting for 17.3 million deaths per year or one in every three deaths. This number is expected to grow to more than 23.6 million by 2030. In the United States alone, nearly 787,000 people died from heart disease, stroke and other CVDs in 2011.¹ CVDs claim more lives than all types of cancer combined, and currently there are 85.6 million Americans living with some form of CVD.¹

Cardiology clinical pharmacists practice as members of interprofessional health care teams and focus on the care of patients with CVD in a variety of settings, including coronary care units, cardiac surgery intensive care units, telemetry units, medical wards, emergency departments, and specialty outpatient clinics that focus on dyslipidemia, heart failure (HF), hypertension (HTN), anticoagulation (AC), cardiac transplant, and arrhythmias. The optimal use of cardiovascular pharmacotherapy requires a thorough assessment of medication-related needs, identification of medication-related problems, development and implementation of a plan of care, follow-up evaluation and medication monitoring, and appropriate documentation at every stage for a given patient. While some aspects of CVD management overlap with generalist practice, complex acute and chronic CVD presents unique clinical challenges requiring involvement of qualified specialists with advanced cardiovascular pharmacotherapy knowledge and patient care skills.

GUIDELINE 1. Identify specific public health and/or patient care needs which are not being met currently and which pharmacists in the proposed specialty can meet effectively. If these needs are currently being met by another BPS Specialty, other areas of pharmacy practice, or by other health professionals, describe how these needs can be met more effectively by pharmacists in the proposed specialty.

The Human and Economic Costs of Cardiovascular Disease

In the United States, CVD is currently the leading cause of death and accounts for one in three deaths each year.¹ By 2030, 40.5% of the U.S. population is projected to have some form of CVD and, based on these projections, the direct medical costs to treat CVD could increase to \$1.48 trillion.² It has also been estimated that almost 5 million years of potential life in people who are younger than 75 years of age are lost annually because of CVD.³

According to the Centers for Medicare and Medicaid Services (CMS), U.S. health care spending grew 5.3% in 2014, reaching \$3 trillion or \$9,523 per person. As a share of the nation's gross domestic product (GDP), health spending accounted for 17.5%.⁴ Should this rate of growth continue, health care spending would exceed 20% of GDP by 2021 and reach almost 30% of GDP by 2030.⁵ According to the Congressional Budget Office, this exceeds our country's spending on food or housing.⁶ Current efforts through the Patient Protection and Affordable Care Act to continue to expand health care to the uninsured place a strong emphasis on prevention for health care solutions.

Heart disease and stroke are among the most widespread and costly health problems facing America today, yet they are also the most preventable. In 2011, CVD cost the United States more than \$300 billion—nearly \$1 billion each day—in health care costs and lost productivity.⁷ Total health care costs for stroke treatment and disability were an estimated \$53.9 billion. In 2006, hospitalization costs due to cardiovascular problems for Medicare beneficiaries reached a high of \$32.7 billion.⁸ The combined direct and indirect cost of CVD in the United States was estimated to be \$444 billion in 2010. This staggeringly high number corresponds to \$1 out of every \$6 spent on health care in the United States.⁹

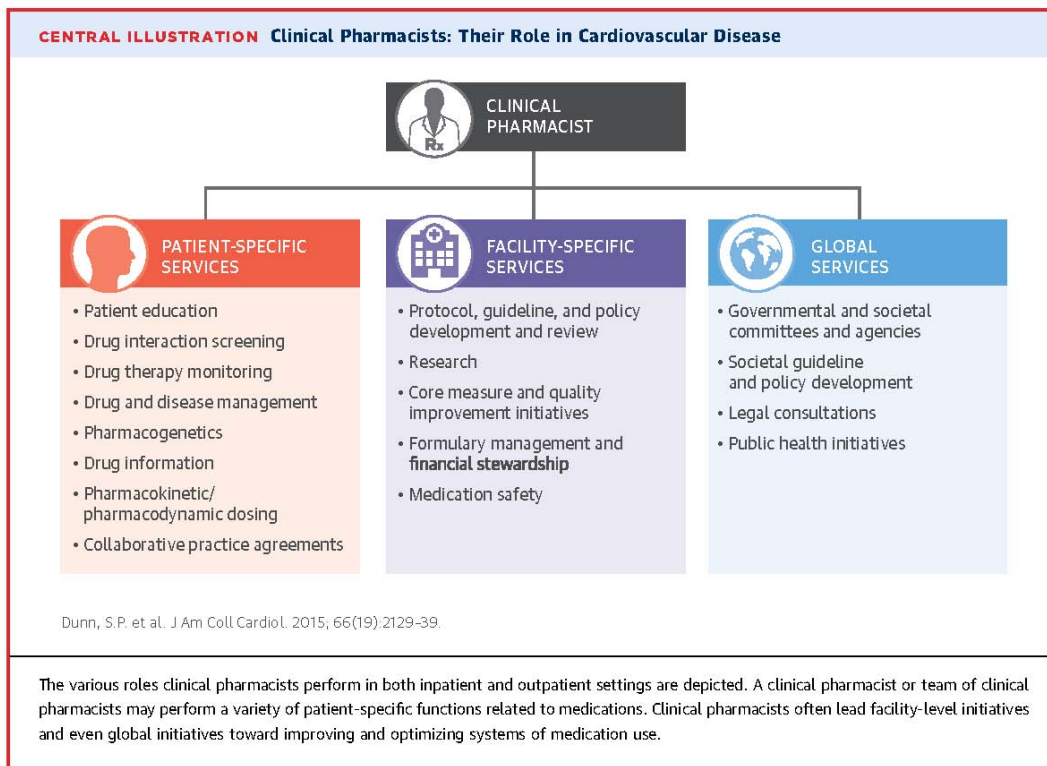
The picture for the future costs of cardiovascular care is even more alarming. To prepare for future cardiovascular care needs, the American Heart Association (AHA) developed methodology to project future costs of care for HTN, coronary artery disease (CAD), HF, stroke, and all other CVD. Between 2010 and 2030, total direct medical costs of CVD are projected to triple, from \$273 billion to \$818 billion. Real indirect costs (due to lost productivity) for all CVD are estimated to increase from \$172 billion in 2010 to \$276 billion in 2030, an increase of 61%.² In the past decade, the medical costs of CVD have grown at an average annual rate of 6% and have accounted for approximately 15% of the increase in medical spending.¹⁰ Although these statistics are eye-opening, CVD is largely preventable and can be positively influenced through the care provided by cardiology clinical pharmacists.

Cardiology Workforce Crisis

Given the significant increase in prevalence in CVD, combined with the expected increases in U.S. population, the aging of the population, and an expected decrease in cardiologists, the American College of Cardiology (ACC) estimates that there is a need to double the number of cardiovascular specialists by the year 2050. The ACC states that “due to the critical shortage of cardiologists and the growing CVD epidemic, it is important to develop collaboration with non-physician providers, including clinical pharmacists, as an efficient and cost-effective means to improved patient outcomes.”¹¹ Clinical pharmacists with advanced cardiovascular training are one category of non-physician providers with documented effectiveness in cardiovascular risk factor reduction and application of evidence-based pharmacotherapy, both of which are recognized to improve CVD outcomes.¹²

ACC also states that, “clinical pharmacists are pharmacists who, through advanced training, experiences, and/or certification have the skills and knowledge to provide clinical pharmacy services to the health care team and patients.” An overview of this concept is depicted in Figure A-1. This lends support to the need and desire from other professional organizations for a process to credential cardiology clinical pharmacists.

Figure A-1. Clinical Pharmacists: Their Role in Cardiovascular Disease



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Roles of Cardiology Clinical Pharmacists

A working group composed of members of the Heart Failure Society of America (HFSA) and the American College of Clinical Pharmacy's (ACCP) Cardiology Practice and Research Network have identified functions performed by cardiology pharmacists that contribute to patient care and help enhance the cardiology workforce. These activities include, but are not limited to the following:

- Provide systematic patient assessment and medication evaluation
- Develop and implement care plans, including follow-up evaluation and medication monitoring, in accordance with a collaborative practice agreement
 - Conduct disease state management
 - Identify and avoid contraindicated drugs based on patient-specific parameters
 - Identify drug-disease interactions
 - Perform pharmacokinetic monitoring
 - Identify effective medication substitutions
 - Ensure adverse drug event prevention and intervention
 - Conduct therapeutic drug monitoring (e.g., digoxin)
 - Adjust medication doses based on renal function, hepatic function, and potential drug interactions
 - Titrate medications based upon evidence-based guidelines and potential for adverse effects (e.g., β -blockers, diuretics, aldosterone antagonists)
- Lead critical pathway design and implementation pertaining to CVD states
- Improve guideline adherence
- Ensure adherence to The Joint Commission's core measures and best practice standards
- Deliver pharmacotherapy-related education about cardiovascular medications to patients, other health care providers, student pharmacists, medical students, and residents
 - Improve patient knowledge of cardiovascular medications, adverse effects, and self-care skills through education
 - Improve communication in transitions of care environments
- Participate in clinical studies, health services (outcomes) studies, and basic and/or translational research
- Participate in continuing professional development, certification, and recertification activities to maintain competence in clinical problem solving, judgment, communication and education, and pharmacotherapy knowledge

Cardiology clinical pharmacists produce a substantial effect on CVD in a wide variety of roles in inpatient and ambulatory settings, largely through the optimization of drug use, avoidance of adverse drug reactions, and transitional care activities focused on medication reconciliation and

patient education.¹¹ According to the published literature, patients with CVD have substantial unmet needs in the areas of adverse drug event and medication error prevention, medication adherence, drug therapy management, individualized dosing, preventive care, and management of chronic diseases.

Adverse drug events and medication errors are significant health issues in the United States and are estimated to cost between \$77 billion and \$177 billion annually.^{13,14} Analysis of 14,983 pharmacist interventions for patients with CVD showed the most common errors involved the wrong drug (36.0%) or wrong dose (35.3%). Prescribers were associated with most errors, and the transition from the outpatient to inpatient setting was the most common point in the system for the occurrence of these medication errors. Clinical pharmacists have demonstrated that interventions to improve medication use in outpatients with CVD decreases the risk of adverse drug events and medication errors.¹⁵ Additional studies have shown that pharmacist-based activities were also associated with greater patient adherence to dabigatran,¹⁶ amiodarone,¹⁷ and other antiarrhythmic medication therapy.¹⁸

The transition period from hospital discharge to the outpatient setting is a particularly high-risk period for patients and can be positively affected by cardiology clinical pharmacists. Care transitions are often characterized by multiple changes in medication regimens, inadequate patient education, and discontinuity of care that can lead to adverse drug events and avoidable health care utilization.¹⁹ Medication discrepancies are common, occurring in up to 70% of patients at admission or discharge, with nearly one-third of these discrepancies having the potential to cause patient harm.²⁰ Engagement of cardiology clinical pharmacists with patients at high risk for adverse events in the transition of care process can improve patient outcomes. A randomized trial of 178 patients demonstrated that pharmacist medication review, patient counseling, and telephone follow-up interventions have demonstrated a lower rate of preventable adverse drug events 30 days after hospital discharge.¹⁹ A tailored, pharmacist-delivered, health literacy–sensitive intervention was also effective among patients with inadequate health literacy, suggesting that targeted practice of pharmacist interventions in this population may be advantageous.²¹

Cardiology clinical pharmacists have also demonstrated decreases in mortality for CVD patients. A comparative study evaluated the effect of the clinical pharmacist as a direct patient care team member on the mortality of all patients admitted to the cardiology unit. The clinical pharmacist in the study group suggested a total of 1,541 interventions, with 92% of these recommendations accepted by the cardiology team. Drug-related problems that were suspected to cause or contribute to a fatal outcome were determined by the clinical pharmacist for patients hospitalized in a cardiology ward. Correction of these drug-related problems, upon

the pharmacist's advice, resulted in a significant decrease in mortality.²² Additional contributions by cardiology clinical pharmacists, within specific areas of CVD, are detailed in the following sections.

Coronary Artery Disease

CAD is the most common type of heart disease, killing over 370,000 people annually with 735,000 Americans experiencing a myocardial infarction (MI).¹ Programs that engage pharmacists to provide direct patient care have demonstrated significant improvements in clinical and humanistic outcomes for patients with CAD. Examples of these programs include:

- A retrospective, longitudinal cohort study conducted by Kaiser Permanente Colorado enrolled 4,896 patients with an incident occlusive CAD event. The study determined the effect of early and sustained enrollment in a comprehensive cardiac care (CCC) program on all-cause mortality in patients with CAD. The CCC program was a collaborative effort between clinical pharmacy specialists and nurses and was directed by a physician. Compared with those not enrolled in the CCC program, patients enrolled were 89% less likely to die. The earlier the program started after a coronary event, the better the mortality reduction benefit.²³
- A systematic review and meta-analysis of 298 studies was designed to examine the effects of pharmacist-provided direct patient care on therapeutic, safety and humanistic outcomes. Significant results were reported in therapeutic and safety outcomes for glycosylated hemoglobin, cholesterol, blood pressure (BP), and adverse drug events, favoring pharmacists' direct patient care.²⁴

Medication adherence is an ongoing concern to clinicians, health care systems, and other stakeholders because of increasing evidence that nonadherence is prevalent and associated with adverse patient outcomes and higher costs of care.²⁵ Nonadherence to medications is a common problem for patients with CVD and one that is positively impacted by cardiology clinical pharmacists. Numerous studies in the literature that highlight the challenges of medication adherence in CAD. Examples of these studies include:

- A population-based cohort study of 4,591 patients found when following acute MI hospitalization, that almost 24% of patients did not fill their cardiac medications by day 7 of discharge.²⁶
- Among patients discharged with prescriptions for aspirin, statins, and β -blockers after acute MI, one study found that almost 34% of patients stopped at least one medication, and 12% stopped all three medications within 1 month of hospital discharge.²⁷
- A study of the long-term use of evidence-based therapies for CAD showed that the use of these therapies has improved but remains suboptimal. Patients' self-report of consistent use of cardiac medications over 6 to 12 months was low, with approximately

three-fourths of patients reporting persistent aspirin use (71%), whereas less than half reported persistent use of β -blockers (46%), lipid-lowering agents (44%), and all three medications (21%) after diagnosis of CAD by coronary angiography.²⁸

- Another study demonstrated that only approximately 40% of patients were still taking statin medications 2 years after hospitalization for acute coronary syndrome, and adherence was even lower for patients taking statins for chronic CAD.²⁹

Additional studies in the literature outline the risks of underprescribing cardioprotective medications,^{30,31} and the importance of following clinical guidelines to ensure appropriate medication selection and use for this patient population.³² There is a documented treatment gap between consensus- and evidence-based recommendations and guidelines and their application in patient care, which can be improved by clinical pharmacy services.^{33,34}

Clinical Care for Patients with Heart Failure

Approximately 5.7 million adults in the United States have HF, and approximately half of patients who develop HF die within 5 years of diagnosis.³⁵ HF costs the nation an estimated \$30.7 billion each year. This total includes the cost of health care services, medications, and missed days of work.² Patients with HF frequently have limitations in their lifestyle and high rates of morbidity and mortality. HF is also the most frequent hospital discharge in the elderly population, accounting for more than 1 million discharges in 2009.³⁶ The frequency of 30-day all-cause readmissions among Medicare recipients with HF is one of the highest diagnosis-related groups and has been estimated to exceed 25%.³⁷

Reports of outcomes from pharmacist interventions demonstrate benefits such as increased use of evidence-based therapies and guidelines, decreases in HF hospitalizations and emergency department visits, and decreases in all-cause readmissions.^{38,39,40,41,42,43} Roles for clinical pharmacists in a multidisciplinary HF team include providing medication reconciliation and education, assuring consistency in medication management that results in improvements in patient satisfaction and medication adherence, and reducing medical errors. Pharmacist interventions in medication adherence are also positive for patients with HF.⁴⁴

To help address this complicated and growing health care need, cardiology clinical pharmacists are engaged in activities such as medication reconciliation, discharge counseling, provider education, medication adherence monitoring and intervention, and therapeutic recommendations. Examples of the published literature that demonstrate positive clinical outcomes for pharmacist care for patients with HF include:

- A before-and-after quasi-experimental study evaluated the effect of a pharmacy-managed program for providing education and discharge instructions for 35 patients

with HF. Throughout patients' hospitalization, the pharmacist collaborated with the multidisciplinary team to make treatment and monitoring recommendations and provided discharge medication reconciliation, discharge medication recommendations, and discharge instructions. Pharmacists also answered patient-specific questions and gave the patient a complete discharge medication list. Pharmacist involvement in medication reconciliation and discharge counseling for HF patients was associated with a significant increase in adherence with The Joint Commission's core measures, a significant reduction in 30-day all-cause readmissions, and a positive effect on patient satisfaction.⁴⁵

- A multidisciplinary approach improving outcomes by managing 181 patients with HF and left ventricular dysfunction showed patients in the intervention group received clinical pharmacist evaluation, including medication evaluation, therapeutic recommendations to the attending physician, patient education, and follow-up telemonitoring. The primary end point was combined all-cause mortality and HF clinical events. All-cause mortality and HF events were significantly lower in the intervention group compared with the control group.⁴⁶
- In a multicenter trial, the effect of a disease management program on clinical and economic outcomes in patients with HF was assessed. A simple and practical in-hospital disease management program improved the utilization of angiotensin-converting enzyme (ACE) inhibitors by almost 50% and promoted use of higher doses of ACE inhibitors. A 6-month patient education and support program for outpatients resulted in a cost reduction per patient for cardiovascular-related events.⁴⁷
- A pooled analysis of two randomized controlled trials examined the effect of pharmacist intervention on adverse drug events and medication errors in 800 total patients. Compared with the control group, the risk of any event was 34% lower in the intervention group, including a lower risk of adverse drug events, preventable adverse drug events, potential adverse drug events, and medication errors. Pharmacist intervention to improve medication use in outpatients with CVD decreases the risk of adverse drug events and medication errors.⁴⁸
- A post hoc analysis of a randomized controlled trial assessed the effect of health literacy on drug adherence in the context of a pharmacist-based intervention for 314 patients with HF. Drug adherence was assessed over 9 months using electronic prescription container monitors on cardiovascular drugs. Health literacy was assessed using the Short Test of Functional Health Literacy in Adults. In patients with HF, those with adequate health literacy have better adherence to cardiovascular drugs than those with inadequate health literacy. The pharmacist intervention improved adherence in patients with adequate and inadequate health literacy.⁴⁹

Cardiology clinical pharmacists are also critical for mechanical circulatory support and heart transplant teams. In fact, the CMS considers the participation of a clinical pharmacist to be a requirement for accreditation, given the highly specialized and complex drug regimens used.⁵⁰

Atrial Fibrillation

An estimated 2.7 million to 6.1 million people in the United States have atrial fibrillation (AF). With the aging of the U.S. population, this number is expected to increase. AF costs approximately \$6 billion each year, and medical costs for people who have AF are approximately \$8,705 higher per year than for people who do not have AF.^{51,52} Positive outcomes in AF have been demonstrated with a team consisting of electrophysiologists and pharmacists who designed a program for evaluating patients with AF, implementing an individualized treatment plan and providing patient education, medication management, and follow-up care. This program reduced the incidence of AF-related hospitalizations and stroke.⁵³

Primary and Secondary Prevention – Hypertension, Diabetes and Lipid Management

The value of improving outcomes for patients with diabetes, lipid disorders, and HTN is well supported in the literature. Almost a third of people in the United States have high cholesterol, a major risk factor for heart disease. People with high cholesterol have twice the risk for heart disease.⁵² Diabetes remains the seventh leading cause of death, with over 29 million people diagnosed with the disease. Hospitalization rates for MI were 1.8 times higher among adults with diabetes than among adults without diabetes, and hospitalization rates for stroke were 1.5 times higher among adults with diabetes compared with those without diabetes.⁵⁴ The total cost of diabetes each year in the United States is \$245 billion.⁵⁵ HTN is also a major risk factor for CVD and affects approximately 77.9 million, or one out of every three, adults in the United States. Projections show that by 2030, prevalence of HTN will increase 7.2% from 2013 estimates.⁵⁶ In the face of these estimates, BP control among patients with HTN remains below national targets. The risk of cardiovascular morbidity and mortality is particularly marked when there is insufficient HTN control and prevention.

Pharmacist involvement in programs that reduce overall cardiovascular risk for patients is well documented. Pharmacists are most often engaged in managing patients with dyslipidemias and diabetes through medication management, screening and education as techniques to improve cardiovascular risk.^{57,58,59,60,61,62,63,64,65,66} Specific examples from the literature which demonstrate the value of pharmacists' contributions to cardiovascular risk reductions include:

- In 2016, the RxEACH study demonstrated that pharmacists with an advanced scope of practice could identify patients with poorly controlled risk factors and significantly reduce their risk for cardiovascular events. This randomized trial conducted in 56 community pharmacies evaluated the effectiveness of a community pharmacy-based

intervention on cardiovascular risk in 723 patients. The intervention consisted of a medication therapy management review and CVD risk assessment and education. The intervention group showed a 21% reduction in risk for CVD events and showed a greater improvement in low-density lipoprotein cholesterol, systolic BP, glycosylated hemoglobin, and smoking cessation.⁶⁷

- A randomized controlled trial of 260 patients demonstrated the effect of adding pharmacists to primary care teams that manage HTN and other cardiovascular risk factors for patients with type 2 diabetes. Patients achieved better BP control when pharmacists were included on the care team.⁶⁸
- Pharmacist-led group medical visits were shown to be efficacious for improving cardiovascular risk factors in a randomized controlled trial of 188 patients in a Veterans Affairs medical center.⁶⁹
- A meta-analysis of 15 randomized controlled trials showed pharmacist interventions improved CVD risk factors among outpatients with diabetes.⁷⁰
- The addition of a pharmacist to a health maintenance organization primary care team improved short-term surrogate markers and long-term cardiovascular risk in a study of 147 adult patients with type 2 diabetes. The estimated 10-year risk of CAD was decreased from 16.4% to 9.3% with enhanced care.⁷¹
- Adding a pharmacist to the health care team for patients with diabetes improves long-term CVD risk. The estimated long-term risks for coronary heart disease and stroke (both fatal and nonfatal) were consistently lower in the enhanced care group.⁷²
- A retrospective chart review of 110 patients showed that pharmacist interventions under a collaborative drug therapy agreement resulted in significant improvement in blood glucose and glycosylated hemoglobin in patients with diabetes.⁷³
- A systematic review of 21 studies of interventions that involved additional visits by pharmacists with expanded roles to care for adult patients with diabetes showed overall improvement in glycosylated hemoglobin for patients in a diverse group of settings and across multiple study designs.⁷⁴

There are numerous studies that evaluate the association between pharmacist interventions in medication adherence and outcomes in patients with HTN.^{75,76,77,78,79} These studies reinforce the benefits of cardiovascular medications in clinical practice and highlight the importance of taking these medications as prescribed to optimize patient outcomes.⁸⁰ There are also numerous studies that show clinical pharmacist interventions improve BP control and medication adherence for patients with HTN.^{81,82,83,84,85,86,87,88,89} Highlights of studies that demonstrate this benefit include:

- A randomized controlled trial enrolled 248 patients to study the effect of pharmacist prescribing on BP control in community-dwelling patients. Intervention group patients

received an assessment of HTN and cardiovascular risk, education on HTN, prescribing of antihypertensive medications, laboratory monitoring, and monthly follow-up visits for 6 months from a pharmacist. Pharmacist prescribing for patients with HTN resulted in a clinically important and statistically significant reduction in BP.⁹⁰

- A study evaluated the cost-effectiveness of a physician-pharmacist collaboration to improve BP control for 625 patients, including low-income and minority populations. At 9 months, average systolic BP decreased and the percentage of patients with controlled HTN was 43% in the intervention group and 34% in the control group. Total costs were lower for the intervention group compared with the control group.⁹¹
- A prospective, non-blinded, cluster randomized controlled trial evaluated a community pharmacist intervention to improve adherence to antihypertensive medications to improve BP control. The primary outcome measure was the change in proportion of self-reported medication adherence. Secondary outcomes were changes in patient BP. This community pharmacist intervention resulted in improved adherence to antihypertensive medication and reduced systolic BP.⁹²
- The effect of pharmacist interventions on BP were documented in a systematic review of 39 randomized controlled trials that included 14,224 patients. Pharmacist interventions included patient education, feedback to physician, and medication management. Pharmacist interventions—alone or in collaboration with other health care professionals—improved BP management. Compared with usual care, pharmacist interventions showed greater reduction in systolic and diastolic BP. The effect tended to be larger when the intervention was led by the pharmacist and was done at least monthly.⁹³
- A prospective, cluster randomized controlled clinical trial with 179 patients demonstrated the effect of a pharmacist-physician co-management model for patients with HTN improves outcomes. Pharmacist-physician collaborative management of HTN achieved consistent and significantly greater reduction in 24-hour BP and a high rate of BP control.⁹⁴
- The SCRIP-HTN trial provides strong evidence that a community pharmacist and nurse team, working collaboratively with patients and primary care physicians, can have a significant effect on HTN management in patients with diabetes mellitus and suboptimal BP control in the community. An extrapolation of these findings shows that a sustained 5-mm Hg reduction in systolic BP would be expected to reduce the long-term incidence of strokes by 30%, coronary events by 23%, and mortality by 13%.⁹⁵

Pharmacist-Managed Anticoagulation Services

The evidence demonstrating improved AC control and reduced bleeding and thromboembolic events for patients managed by pharmacists, compared with usual medical care models, is

compelling.^{96,97,98,99,100,101,102,103} Specific citations that speak to the role of cardiology clinical pharmacists in the management of AC therapy for patients include:

- A study comparing newly anticoagulated patients treated with usual medical care with those treated at an AC clinic accounted for patient characteristics, AC control, bleeding and thromboembolic events, and differences in cost for hospitalizations and emergency department visits and showed that the clinical pharmacist–run clinic improved AC control, reduced bleeding and thromboembolic event rates, and saved 8 per 100 patients annually in reduced hospitalizations and emergency department visits.¹⁰⁴
- A retrospective, matched cohort study of 350 patients evaluated the differences in health care expenditures and therapeutic outcomes of patients receiving warfarin therapy management by a pharmacist-managed AC service compared with those receiving usual medical care. This model showed a cost savings of \$647,024 for the pharmacist AC service group. These patients also had significantly fewer AC-related adverse events, hospital admissions, and emergency department visits. The percentage of international normalized ratio (INR) values in range and the percentage of time with INR values in range were significantly higher in the pharmacist-managed group.¹⁰⁵
- A study that evaluated the safety and economic impact of three models of AC management services, including usual medical care, a nurse-managed service and a pharmacist-managed service showed that pharmacist-managed AC services reduced the rates of AC-related emergency department visits and hospitalizations, with significant financial impact.¹⁰⁶
- A prospective, randomized trial evaluated the impact of a pharmacist-led warfarin patient self-management program on quality of life and AC control compared with management in a physician-led specialized AC clinic. The pharmacist group resulted in significant improvement in quality of life and a reduction in the time required for AC monitoring, while maintaining a level of AC control similar to a high-quality specialized AC clinic.¹⁰⁷
- Pharmacist-directed AC management services have been shown to significantly lower AC-related mortality, length of hospital stay, bleeding complications, blood transfusion requirements, and cost of therapy.¹⁰⁸
- A retrospective database review of 141,079 patients demonstrated that involving clinical pharmacists in the direct care of intensive care patients with thromboembolic or infarction-related events was associated with reduced mortality and improved clinical outcomes and demonstrated fewer bleeding complications.¹⁰⁹

Venous Thromboembolism Prevention

Venous thromboembolism (VTE) is the most preventable cause of death for hospitalized patients and thromboprophylaxis is the number one strategy to improve patient safety in

hospitals.¹¹⁰ Published guidelines have been in existence for over 25 years, but gaps in VTE prevention and care still exist. Current prescribing practices for VTE prophylaxis and treatment are suboptimal, particularly regarding the use of appropriate prophylaxis in accordance with evidence-based guidelines.¹¹¹ Failure to prevent avoidable VTE is associated with a substantial clinical and economic burden, due not only to the initial event, but also to VTE recurrence and long-term sequelae. Quality improvement initiatives such as those from the CMS, the National Quality Forum, and The Joint Commission's Surgical Care Improvement Project have developed performance measures to address the shortfall and improve adherence with best-practice recommendations. Several studies have highlighted the benefits of pharmacist-led AC services for reducing the occurrence of VTE and bleeding complications while reducing excess hospitalization and health care costs.¹¹²

There is significant documentation of the pharmacist's role and positive patient outcomes that result from management and oversight of drug therapy in VTE patients. Pharmacists can ensure that at-risk patients receive the correct drug at the correct dose for the correct duration, from initial presentation to outpatient follow-up.¹¹³ Pharmacists can also help hospitals achieve performance measures by aiding in the development and implementation of local VTE guidelines, policies, and other quality improvement initiatives; helping to establish critical pathways with protocols; and providing valuable education for other health care professionals and patients alike.^{114,115,116,117} Additional examples of improvements in patient outcomes due to pharmacist engagement include:

- A prospective study with retrospective data collection was conducted utilizing data from 1,879 patients in a control cohort and 1,646 patients in the intervention cohort. The rate of appropriate prophylaxis increased from 23.8% to 37.9%. Preventable VTE incidence was reduced by 74% from 18.6 to 4.9 per 1,000 patients. A pharmacy-led, multifaceted intervention can significantly increase the rates of appropriate prophylaxis and significantly reduce the incidence of preventable VTE in hospitalized patients.¹¹⁸
- A pharmacist-led program for VTE prevention was associated with a significant increase in the prescribing VTE prophylaxis and a significant reduction in ultrasonographically confirmed deep vein thrombosis.¹¹⁹

Recognition of Cardiology Clinical Pharmacists

Patients with acute and chronic CVD require pharmacologic management by pharmacists with specialized training, knowledge, and experience in managing cardiac pharmacotherapy. General practice within pharmacy and medicine are often challenged to successfully meet the medication management needs of these patients. For a myriad of reasons previously outlined, patients with CVD are at higher risk for medication errors, adverse drug events, and other negative consequences of inappropriate medication use. Licensure examinations by state

boards of pharmacy evaluate some of the core functions performed by cardiology clinical pharmacists but do so at a generalist level that does not evaluate abilities to manage complex needs of patients with CVD.¹²⁰ Pharmacists in general practice perform important medication management and patient education functions. However, management of complex cardiology patients frequently requires the advanced knowledge and skills of the specialized practitioner.

Many pharmacists have distinguished themselves by gaining in-depth knowledge, advanced training, and expertise to provide specialized pharmaceutical care to patients across the spectrum of CVD. These cardiology clinical pharmacists are in a position to be part of the solution to our nation's health care crisis. In specialized practices that span a variety of institutional and outpatient environments, cardiology clinical pharmacists assist other providers in screening and monitoring health conditions, collaboratively managing medications, ensuring appropriate dosing and medication use, and minimizing avoidable complications of diseases, conditions, and pharmacotherapy. They also provide education, counseling, and support for patients, families, and caregivers.

There is a need for a mechanism to identify, recognize, and provide access to cardiology clinical pharmacists who can meet patient needs for specialized medication management. Individuals who have obtained specialist recognition and have attained the additional training, experience, and expertise to lead patients, the profession, other health care providers, and society to better public health are necessary for managing diseases and reducing preventable conditions, complications, and sequelae. Specialty recognition of cardiology pharmacy practice by the Board of Pharmacy Specialties (BPS) would provide a mechanism through which pharmacists could attain voluntary certification that recognizes achievement of a focused and distinct level of specialized knowledge, experience, and skills in serving the unique medication needs of patients.

A significant number of pharmacists have prepared themselves to meet public health needs by providing specialized care for cardiology patients that includes comprehensive medication management, collaborating with other health care providers, and addressing a broad range of other health-related needs. In addition, cardiology clinical pharmacists in specialty practice have provided leadership among the profession in establishing patient care services, precepting student pharmacists in required advanced pharmacy practice experiences (APPEs) and introductory pharmacy practice experiences (IPPEs), and training other pharmacists through residencies, fellowships, and live and enduring educational programs. These pharmacists have also engaged in leadership positions within multidisciplinary cardiology organizations such as the ACC, the American Diabetes Association, the AHA, the American Society of Hypertension,

the HFSA, the Heart Rhythm Society, the International Society for Heart and Lung Transplantation, and the National Lipid Association.

By any measure, the health challenges facing today's patients with CVD are not being—and cannot be—adequately addressed by pharmacists with entry-level knowledge and skills in general practice or other types of pharmacy specialties. BPS certification of cardiology clinical pharmacists will lay the groundwork for other committed and interested pharmacists to focus their professional development, training, and educational efforts on preparing themselves to fully meet this public health need.

There is some overlap between specialized cardiology pharmacy practice and the existing BPS pharmacotherapy specialty, specifically because BPS has offered added qualifications in cardiology under the pharmacotherapy specialty since 2000. The petitioning organizations feel strongly that the evidence presented in this petition will justify a cardiology pharmacist specialty as a stand-alone specialty. There are significant differences between the specialized practices of cardiology pharmacy practice and pharmacotherapy that make it important to recognize the cardiology specialty independently. The knowledge, skills, training, and functions of pharmacotherapy specialists lack the depth of specificity required to provide specialized cardiology pharmacy practice, without additional training and experience. BPS has already acknowledged the need for specialty recognition for these practitioners through the added qualifications process.

It has long been recognized that the base of knowledge and skills in medicine far exceeds an individual's ability to master every facet of medicine. Currently, physicians may become certified in any of 150 medical specialties or subspecialties.¹²¹ Among the specialties in medicine, overlap is apparent in many areas. This overlap is unavoidable given the complexities and commonalities within patient care. In comparison with cardiology pharmacy and pharmacotherapy specialties, separate and distinct medical specialties (i.e., not subspecialties) exist in family medicine, cardiology, pediatric medicine, internal medicine, and public health/preventive care.

Likewise, in pharmacy, the breadth and depth of knowledge exceed an individual's ability to master content and skills at an advanced level in all areas of practice and pharmacotherapy. A specialty in cardiology pharmacy practice is distinct from other BPS specialties in its emphasis on a patient population that requires substantial specialized knowledge, skills, and abilities working within a distinct and unique patient population.

Health professionals managing the pharmacotherapy of patients with CVD must possess specialized knowledge and skills regarding medication use to achieve optimal outcomes.

Cardiology clinical pharmacists are uniquely qualified among all health professionals as the medication-use experts on the health care team. Physicians, nurses, physician assistants, nurse practitioners, and others do not have the pharmacologic and pharmacotherapeutic expertise to identify drug-related problems and manage nuances of medication use in these patients with the perspective and understanding of the pharmacist. Pharmacists with specialized knowledge, skills, and practices in the care of patients with CVD are therefore best positioned to meet the complex medication management needs of these patients.

Many pharmacists in community pharmacies, hospitals, ambulatory care clinics, managed care organizations, and other settings where patients with CVD receive care are providing medication management, conducting screenings and monitoring, and performing important therapeutic functions to optimize medication use. These successes contribute to the emerging, impressive data being gathered and published demonstrating the value of pharmacists' services and care for patients with CVD.

Cardiology is a unique and distinct clinical practice within the pharmacotherapy specialty that is focused on the rational and effective use of agents to treat and prevent CVD. It is in the best interest of both the profession and patients to recognize pharmacists with specialized training and expertise in cardiology.

GUIDELINE 2. Specify how the functions performed by pharmacists in the proposed specialty address these specific needs of the public's health and well-being such as improved safety, cost, quality of life and outcomes. Included in this discussion should be a description of how the public's health and well-being may be at risk if the services of practitioners in the proposed specialty are not provided.

Cardiology clinical pharmacists are located in many different settings, including health systems, ambulatory clinics, physician practices, and managed care organizations. In their specialized practices, these pharmacists establish long-term relationships with patients, caregivers, and providers that form a foundation of trust, education, motivation, and support.

The Value of Cardiology Clinical Pharmacists to Team-Based Care

The increasing prevalence of CVD continues to accelerate the utilization of a team approach to patient care and a growing body of evidence supports the expanded role of clinical pharmacists as members of the health care team with beneficial contributions directly related to safe, effective and appropriate medication use for patients with CVD.^{84,85,87,122,123,124,125,126} Evidence also shows that adding pharmacists to primary care teams for 1-year significantly reduced the predicted 10-year risk of cardiovascular events for patients with type 2 diabetes without established CVD.¹²⁷

A systematic review of 59 studies assessing the effectiveness of clinical pharmacist interventions within a multidisciplinary team in the secondary prevention of CVD for patients with HF, coronary heart disease, or those with CVD risk factors showed improved CVD risk factors, improved patient outcomes, and a reduced number of drug-related problems.¹²⁸ Pharmacists provided educational interventions, medication management interventions, or a combination of both.

Functions of Cardiology Clinical Pharmacists

Cardiology clinical pharmacists serve as authoritative experts on the optimal use of medications used in the care of patients with CVD. They encompass providing comprehensive pharmacotherapeutic management of patients with CVD including obtaining pertinent patient information via medical records, discussions with other health care professionals, and interviews with the patient and/or caregiver. These pharmacists obtain relevant clinical and laboratory data as well as results of diagnostic procedures and analyze and interpret all collected patient information. Cardiology clinical pharmacists identify and prioritize current or potential patient-specific medical, medication, and nutrition-related problems. They establish therapeutic goals with the health care team, patients, families, and caregivers. The cornerstones of their practice include designing, recommending, and implementing individualized therapeutic regimens and plans for follow-up and longitudinal monitoring for safety and effectiveness of therapeutic regimens. They also ensure that medication goals are aligned and prioritized within the patient's overall treatment goals. These pharmacists participate in the management of emergencies, reconcile medications across transitions of care, and identify and refer patients to appropriate levels of care.

Cardiology clinical pharmacists advance patient care by providing a practice that helps patients achieve clinical goals from their medications. Cardiology clinical pharmacists participate in decision making regarding selection and implementation of equipment and technology and provide decision support in the medication-use process. They adopt, adapt, or develop evidence-based practice guidelines and protocols for the management of patients with CVD and establish processes to anticipate, prevent, review, and report medication errors and adverse events. Continuous quality improvement, directing the medication-use process for investigational drugs, and justifying and documenting the clinical and financial value of the practice are important aspects to the practice management functions of cardiology clinical pharmacists.

Cardiology clinical pharmacists have significant responsibilities related to information management and education. They are actively engaged in providing staff development and education along with training for students and residents in pharmacy, medicine, and nursing

concerning safe and effective use of medications and other issues about medication use in the care of the patients with CVD. They educate and provide counseling to patients, families, and caregivers regarding the safe and effective use of medications, treatment plans, the monitoring of side effects, and the importance of adherence to the treatment regimen. They make important contributions to the medical and scientific literature and retrieve and interpret biomedical literature with regard to study design, statistical analysis, study results, and applicability to cardiology pharmacy practice. Cardiology clinical pharmacists also may be responsible for the development and maintenance of medical reference libraries. Engagement and involvement in professional organizations related to pharmacy and cardiology practice is an important component of developing leadership skills and clinical competency.

Cardiology clinical pharmacists are adept at managing the complex medication needs of patients with CVD as well as in detecting and addressing drug-related problems, including preventable errors and predictable adverse drug events. With a solid relationship of trust as a foundation, these pharmacists motivate their patients and caregivers to adhere to treatment regimens and to actively and accurately monitor their chronic diseases. Likewise, they maintain collaborative, collegial relationships with other members of the health care team, built on a foundation of mutual respect and shared goals. These relationships foster an environment for prompt detection and resolution of medication- and disease-related problems. Without a sufficient supply of pharmacists who devote the majority of their time to direct, specialized patient care activities focused on patients with CVD, medication-related problems will persist.

GUIDELINE 3. Describe how functions provided by the practitioners in the proposed specialty will fulfill the responsibility of the profession of pharmacy in improving the public's health. Petitioners may use the following Vision for Pharmacists' Practice adopted by the Joint Commission of Pharmacy Practitioners in January 2014 when defining responsibilities of the profession:

Patients achieve optimal health and medication outcomes with pharmacists as essential and accountable providers within patient-centered, team-based health care

Pharmacists have a responsibility to the American public to ensure that medications are used appropriately and desired medication outcomes are achieved. Most national pharmacy organizations, including the American Pharmacists Association, the American Society of Health-System Pharmacists, the ACCP, the American Association of Colleges of Pharmacy, and the BPS, support the expanded credentialing of pharmacist specialists, similar to credentialing in other health professions, in order to meet the vision for the future of pharmacy practice and to improve patient care. A recent comparison of practice patterns between inpatient cardiology

pharmacists, who were board certified pharmacotherapy specialists with and without added qualifications in cardiology (BCPS-AQ Cardiology and BCPS, respectively), showed that there were differences in practice between credentialed and noncredentialed pharmacists.¹²⁹ BCPS-AQ Cardiology pharmacists participated in rounds 100% of the time and spent twice as much time performing administrative tasks such as attending meetings, engaging in Pharmacy and Therapeutics Committee activities, and developing policies and procedures. BCPS-AQ Cardiology pharmacists were less involved in activities such as drug protocol management, order verification, and clinical care (i.e., monitoring patients, assessing therapy, optimizing pharmacotherapy). Both groups spent similar time on educational and research activities.¹²⁹

Achieving the vision of the Joint Commission of Pharmacy Practitioners will require more cardiology clinical pharmacists with the knowledge, skills, and abilities to manage complex medication needs specifically for cardiology patients. Cardiology clinical pharmacists adeptly manage complex medication regimens, develop and refine individualized patient care plans, work collaboratively as members of the health care team, conduct and publish research, and maintain long-term relationships with patients, families, and caregivers.

Cardiology clinical pharmacists serve as practice leaders within their institutions, organizations, the profession of pharmacy, and the more expansive area of cardiology. They often serve as preceptors for APPEs, IPPEs, and postgraduate year one and postgraduate year two residency experiences. A new specialty in cardiology pharmacy practice would be consistent with the BPS mission: “to improve patient care by promoting the recognition and value of specialized training, knowledge, and skills in pharmacy and specialty board certification of pharmacists.”¹³⁰ BPS specialty certification is not only the pharmacist’s path to advancement in contemporary medicine but also a roadmap for pharmacists who desire to gain additional training and knowledge to differentiate themselves from pharmacists in general practice or other specialty practices. By achieving certification, pharmacists acquire a tool that provides assurance of their specialized knowledge and skills to other health professionals, stakeholders, and society. The complexities of care for cardiology patients continue to multiply. Advances in medications and technology are driving the need for specialized training to expand pharmacists’ pharmacotherapy knowledge and patient care skills to manage highly complex medication regimens for patients with CVD.

All pharmacists perform important patient care functions in serving the public health needs of society. By definition, pharmacists who voluntarily choose to earn BPS certification are prepared to meet the needs of patients within their respective specialty areas more effectively than entry-level pharmacists because they have acquired specialized knowledge and training beyond the Doctor of Pharmacy degree and minimum standards for licensure. In all areas of

cardiology pharmacy practice, collaboration with other members of the health care team is critical to prevent medication errors, ensure appropriate medication use, and ensure that desired therapeutic outcomes are achieved. The needs of patients with CVD are significant, variable, and growing, and their needs are sufficiently distinct to support recognition of cardiology clinical pharmacists as a separate and distinct specialty. Effective, successful, high-quality care for these patients will require the full application of specialized knowledge and skills of cardiology clinical pharmacists and those who would seek to achieve specialty recognition in cardiology pharmacy practice.

The ultimate goal of pharmacotherapy specialization and added qualifications is to ensure quality patient care and improve therapeutic outcomes. As the cardiovascular field continues to expand in both scope and complexity, there will be an increasing need for highly trained pharmacotherapy specialists with expertise in the field of cardiology. A stand-alone specialty in cardiology would clearly identify for employers, third-party payers, physicians, patients and the public those individuals who have specialized competencies and expertise in the field of cardiology.

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CRITERION B: Demand

The area of specialization shall be one in which there exists a significant and clear health demand to provide the necessary public reason for certification. ***This criterion emphasizes DEMAND.*** BPS defines DEMAND as a willingness and ability to purchase the services of a Board Certified Pharmacist.

The demand for cardiology clinical pharmacists can be expressed in terms of requests for services from other health professionals and patients. Employment trends and surveys that document increased demand for cardiology clinical pharmacists also reflect a significant and clear health demand.

Demand for Cardiology Clinical Pharmacist Services

Cardiology clinical pharmacists focus on the care of patients with complex and/or advanced cardiovascular disease (CVD). This includes a systematic assessment of a patient's clinical status, evaluation of all medications (including prescription and nonprescription agents and herbal/nutritional supplements), development and implementation of a care plan, follow-up evaluation and medication monitoring, and accurate documentation for the entire process of care. The care process for patients with complex and/or advanced CVD is intricate and unique and requires full engagement with an interprofessional care team.

The value of specialized pharmacotherapy knowledge and skills (e.g., as provided by postgraduate year two cardiology residency programs, cardiology fellowship programs, or equivalent practice experience) is increasingly recognized by cardiology professional associations/organizations, including the American College of Cardiology (ACC). The ACC has a long-standing commitment to team-based cardiovascular care and continues to advocate for establishment of interprofessional teams to provide the highest level of care for patients. Recently, the organization formally recognized the emerging importance of advanced practice providers (as defined by ACC), including advanced practice nurses, physician assistants, and pharmacists (i.e., PharmDs). In 2015, the ACC produced and published its *Health Policy Statement on Cardiovascular Team-Based Care and the Role of Advanced Practice Providers* to articulate policy for cardiovascular team-based care as it relates to interprofessional practice as an asset to patient care. The statement supports cardiology clinical pharmacists' focus on managing complex drug therapy regimens for patients with CVD, necessarily incorporating

medication reconciliation review and medication adherence as discrete elements of this practice.¹

The International Society for Heart and Lung Transplantation (ISHLT) also strongly supports and recognizes the value of cardiology clinical pharmacists. The *ISHLT Guidelines for the Care of Heart Transplant Recipients* state: “Transplant centers should strive to have specialty-trained pharmacists or physicians with expertise in pharmacology as part of the multidisciplinary team.” The guideline further asserts: “Integration of input from pharmacists and infectious disease specialists is important during the development of treatment protocols for [heart transplant] HT recipients.”²

The Centers for Medicare and Medicaid Services (CMS) has outlined the specific expectations for transplant centers within the Medicare program, hospital conditions of participation, and requirements for approval and reapproval of transplant centers to perform organ transplants. “Section 482.98(e) of this final rule states that the multidisciplinary transplant team must be composed of individuals with the appropriate qualifications, training, and experience in the relevant areas of medicine, nursing, nutrition, social services, transplant coordination, and pharmacology”; CMS expects that “the team will include an individual with expertise in transplant pharmacotherapy” (e.g., clinical pharmacist) to be a requirement for accreditation, given the highly specialized and complex drug regimens used.³

The inclusion of pharmacists as part of the clinical practice team for cardiac care is also strongly reinforced in the literature. Pharmacists play an important role in medication management, adherence, titration, and disease management programs.⁴ A systematic review of randomized controlled trials that involved pharmacist interventions among outpatients with CVD showed that pharmacists improve the management of CVD risk factors in outpatients.⁵ Pharmacist involvement in a disease management program to care for patients with myocardial infarction or heart failure (HF) improved The Joint Commission core measures for hospitalized patients through medication evaluation and education for patients.⁶ In addition, a systematic review of 12 randomized controlled trials demonstrated that pharmacist care in the treatment of patients with HF greatly reduces the risk of all-cause and HF hospitalizations. The authors conclude that since hospitalizations associated with HF are a major public health problem, the incorporation of pharmacists into HF care teams should be strongly considered.⁷

The HeartMate II clinical investigators called for involvement of pharmacists in mechanical circulatory support patient assessment and optimization. The pharmacotherapeutic management of patients supported with mechanical circulatory support devices requires individualized care, with pharmacists as part of the team, based on the characteristics of each

pump and recipient. Cardiology clinical pharmacist management of the pharmacotherapy associated with the provision of mechanical circulatory support to patients with end-stage HF and guidance regarding the selection, assessment, and optimization of drug therapy is of specific importance for this population.⁸

The U.S. Public Health Service also recognizes the value of clinical pharmacists in managing patients with CVD. According to Scott F. Giberson, former U.S. Assistant Surgeon General: “As the most accessible health-care professionals in a community, pharmacists are trusted by patients and have the clinical training and the capacity to provide patient care throughout the continuum of chronic diseases, including prevention, chronic disease management, patient education, adherence counseling, and provider consultation. As essential members of the health-care team, pharmacists in multiple practice settings function as health-care providers to deliver patient care services...for CVD.”⁹

Giberson also writes: “Aiming to prevent one million heart attacks and strokes during a five-year period through appropriate aspirin therapy, blood pressure control, cholesterol management, and smoking cessation (ABCS), the Million Hearts™ campaign calls for a concerted effort in targeting cardiovascular health”; and “Because CVD prevention and care involve both the clinical and community realms, pharmacists are uniquely positioned to contribute to the Million Hearts campaign goals.”⁹

GUIDELINE 1. Include statements of support by stakeholder organizations and other entities, other than petitioners, that attest to the demand for pharmacists with training and knowledge to provide services in the proposed specialty. Stakeholder organizations can include non-pharmacist health professional organizations, public and private health care entities, and consumer organizations.

Appendix B-1 provides statements from the following individuals and organizations that specifically attest to the demand for pharmacists with training and knowledge to provide services in cardiology practice:

- **American College of Cardiology (ACC)**
Mary Norine Walsh, MD, FACC
President-Elect, ACC
Associate Professor of Medicine, Indiana University School of Medicine
Medical Director, Heart Failure and Cardiac Transplantation
Director, Nuclear Cardiology, St. Vincent Heart Center


- **American Heart Association (AHA)**
 Mariell Jessup, MD, FAHA, FACC, FESC
 Immediate Past President, AHA
 Professor of Medicine
 University of Pennsylvania School of Medicine
 Heart and Vascular Center

- **Associate Editor of *Circulation: Cardiovascular Quality and Outcomes***
 Frederick A. Masoudi, MD, MSPH
 Professor of Medicine, Division of Cardiology
 University of Colorado–Anschutz Medical Campus

- **Heart Failure Society of America (HFSA)**
 JoAnn Lindenfeld, MD
 President, HFSA
 Professor of Medicine, Vanderbilt University Medical Center
 Director, Section of Heart Failure and Transplantation
 Vanderbilt Heart and Vascular Institute

- **National Lipid Association (NLA)**
 Carl Orringer, MD, FNLA
 President, NLA
 Associate Professor, Division of Cardiovascular Medicine
 Director, Preventive Cardiovascular Medicine Program
 University of Miami Health System

- **UNC Health Care Senior Executives**
 - Brian Goldstein, MD, MBA
 Executive Vice President and Chief Operating Officer
 - Janet Hadar, MSN, MBA
 Vice President, Professional and Support Services
 - Rowell Daniels, PharmD, MS
 System Vice President, Pharmacy
 - Scott Savage, PharmD, MS
 Interim Director of Pharmacy

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 Patient

- **George G. Sokos, DO, FACC**
 Program Director, Advanced Heart Failure and Transplantation Cardiology Fellowship
 Assistant Professor, Drexel University College of Medicine
 Section of Heart Failure, Transplant, Mechanical Circulatory Support, and Pulmonary Hypertension
 Cardiovascular Institute, Allegheny General Hospital

- **William B. White, MD, FASH, FAHA, FACP**
 Professor of Medicine
 University of Connecticut School of Medicine, Farmington

- **Barbara S. Wiggins, PharmD, BCPS-AQ Cardiology, CLS, FCCP, FNLA, FAHA**
 Pharmacy Clinical Specialist–Cardiology
 Medical University of South Carolina
 Adjunct Professor
 South Carolina College of Pharmacy

Key points within these letters of support speak to the demand for cardiology clinical pharmacists practicing at the specialty level. Some of the valuable points that underscore the demand for specialty recognition are outlined below, and the complete letters of support are attached as Appendix B-1:

The **American College of Cardiology** indicates that *a board certification for pharmacists who specialize in cardiology, will provide a mechanism for further assuring their optimal use in improving CV care and practice, facilitating the communication of the latest advances, and promoting an adequate and qualified workforce in the future. As with other qualified advanced practice providers, clinical pharmacists are underutilized; a 2009 ACC survey demonstrated that many cardiologists are unfamiliar with how best to apply a nonphysician team approach to patient care. Importantly, the major application of a clinical pharmacist to direct patient care is team-centric and not independent of physicians or other licensed providers. Per the 2015 ACC Health Policy Statement on Cardiovascular Team-Based Care and the Role of Advanced Practice Providers, to maximize the role of advanced practice providers, including pharmacists, the CV Community must have a better understanding of the training, development, utilization, and potential value they bring to the cardiovascular care team.* The organization also

specifically recognized the role that pharmacist members play on the majority of national ACC committees and councils that support key College initiatives.

Mariell Jessup, MD, FAHA, FACC, FESC, is a practicing cardiologist, past president of the American Heart Association (AHA), and an officer of the Heart Failure Society of America. Her letter expresses the significance of board certified cardiology pharmacists to her, both organizationally and professionally. *[I am] keenly aware of the many contributions that pharmacists who specialize in cardiology make to support numerous important AHA initiatives, [such as] delivering continuing education presentations at both local and national AHA meetings, disseminating research findings in poster and platform presentations at these same meetings, and serving as abstract and scientific grant reviewers. Perhaps more importantly, I maintain an active clinical practice in cardiology and rely upon the input and assistance of pharmacists who specialize in cardiology every day. In the Penn Heart and Vascular Program at the University of Pennsylvania, we rely on our pharmacists for help in our heart failure clinic and have recently hired a dedicated pharmacist for our heart transplant program. In addition, we have a dedicated pharmacist in our Coronary Care Unit and on each floor of our Intermediate Care Unit in the hospital. As a Board Certified Cardiologist, and as Chair of the Cardiovascular Board of the American Board of Internal Medicine (ABIM), I appreciate this initiative of the pharmacy community to develop a similar certification process for pharmacists. Having pharmacists board certified in this specialty area will validate for other health care providers that they are maintaining specialized knowledge of the use of cardiovascular medications. Given the rapidly growing complexities of drug therapies used to manage CVD, this certification is warranted. Now, more than ever, the health care system is dependent on these pharmacists to assist with assuring safe and effective selection of cardiovascular medical regimens.*

Frederick A. Masoudi, MD, MSPH, is a practicing cardiologist at the University of Colorado who has held leadership positions in both the American Heart Association (AHA) and the American College of Cardiology (ACC). *My experiences have provided me with an appreciation of the importance of pharmacists with specific expertise in cardiology. From a clinical perspective, I know of the importance of our pharmacy team to the quality and safety of care we provide. On the inpatient service, it is entirely noticeable when we are not accompanied by a pharmacist and also when our team includes a pharmacist who has a strong cardiovascular background. Over the last decade, with the introduction of pharmacists to our teams, I believe that the care we deliver to our patients has improved significantly. Teams with a wide range of talents are critical to achieving high value, safe clinical care. We are fortunate to work in a time*

when the drug therapies available to us have expanded exponentially. The increasing complexity, however, increases the importance of team members with specific training in cardiovascular pharmacotherapy.

JoAnn Lindenfeld, MD, is the current president of the Heart Failure Society of America (HFSA) and a practicing heart failure specialist who currently directs the Section of Heart Failure and Transplantation at Vanderbilt University. Her letter of support outlines the importance of including cardiology pharmacists in multidisciplinary health care teams. *[Cardiology pharmacists] provide critical input for both the inpatient and outpatient services in heart failure, transplantation, and mechanical circulatory support. In addition, they significantly enhance research in all of these areas. Pharmacists have become an integral part of the HFSA, contributing to all of our committees. It has become clear that improving the collaborative nature of practice has improved the care of our heart failure patients. I rely on pharmacists with special expertise in cardiology to assist my practice on a daily basis. Pharmacists with special cardiovascular expertise have become an integral part of our heart failure program in all phases—clinical, administrative and research. Pharmacists are so important that CMS has mandated specialty pharmacists in both the transplant and mechanical circulatory support programs. Having pharmacists board certified in this specialty area signal other health care providers that they are maintaining specialized knowledge of the use of cardiovascular medications and that they can provide specialized expertise to assist in the care of their patients.*

Carl Orringer, MD, FNLA, also shared the significance of the inclusion of cardiology pharmacists on the multidisciplinary health care team. *As the current president of the National Lipid Association (NLA) and a cardiologist, I can speak extensively to the necessary role of advanced trained pharmacists in Cardiology Pharmacy Practice based on my experience working with cardiology specialized pharmacists. Pharmacists specialized in Cardiology Pharmacy Practice are essential, multidisciplinary health care team members in inpatient and outpatient settings. They serve a valuable role through advanced knowledge and application skills supporting the optimization of pharmacotherapy for individual patients in the primary and secondary prevention of cardiovascular disease. The NLA is composed of physicians, pharmacists, physician assistants, dietitians, nurses, and researchers. Through this collaborative approach to the care of patients, the NLA is focused on enhancing the practice of lipid management by optimizing the role of each health care discipline, especially the role of pharmacists specialized in Cardiology Pharmacy Practice. The NLA recognizes the key roles of advanced trained clinicians such as cardiology specialized pharmacists in the management of patients with dyslipidemia. The NLA has been in collaboration with the*

Accreditation Council on Clinical Lipidology in the development of the clinical lipid specialist (CLS) exam in 2006, which developed the opportunity for pharmacists in addition to other non-physician clinicians to become certified as a CLS. This process was driven by the demand for specialty trained non-physicians, many of whom are pharmacists who specialize in cardiology.

In their letter of support, the **senior executives at UNC Health Care**, who have *decades of experience employing and working alongside board certified pharmacists who contribute in many ways to assuring optimal care of the patients we serve*, speak directly to the value of cardiology pharmacists. *Job postings for these positions routinely cite that board certification is preferred...maintaining board certification serves as a critical step to assuring the highest level of clinical pharmacy services are provided. Under a supervising physician, these pharmacists manage drug therapy including diagnosis and product selection, dosing optimization, and ordering tests as needed. These pharmacists serve in a critical capacity expanding and elevating the services our health care system can offer. On almost every inpatient service, a clinical pharmacist rounds on a daily basis with the medical team to assure safe and effective medication use. Our board certified pharmacists have demonstrated that standardizing post-discharge care at one of the UNC clinics reduced readmissions by 65% with one 30-day readmission avoided for every seven patients cared for under a new program.*¹⁰

Sharing the significance cardiology pharmacists have on patients, [REDACTED] a 74-year-old heart transplant recipient, received his transplant at UNC Hospitals–Chapel Hill 16 years ago and specifically acknowledges his “personal” board certified pharmacist. *Thanks to the wonderful doctors at UNC Hospital. They have given me all the support needed about my medications, what to take, and when to take it. I have all the trust and confidence in their evaluations and decisions. I know I would not be alive today if it was not for them.*

In his letter of support, **George G. Sokos, DO, FACC**, discusses the contributions of cardiology pharmacists. Dr. Sokos practiced as a pharmacist prior to becoming a cardiologist. *Cardiology pharmacists have been instrumental with the development and implementation of several heart failure clinics in rural areas of Pennsylvania as part of a grant through the Pennsylvania Department of Welfare. I have also worked closely with our pharmacist in creating an iPad app for heart failure education. As pharmacotherapy continues to become more complex, there is an ever-increasing need for more refined expertise to assure safe and effective selection of treatment regimens. Board Certification for pharmacists who specialize in cardiology will provide a pathway to*

ensure continued expertise. Personally, I have had the pleasure collaborating in research endeavors with cardiology pharmacists. I have learned firsthand how pharmacists are vital to the care of my patients on a daily basis.

William B. White, MD, FASH, FAHA, FACP, is a professor of medicine at the University of Connecticut School of Medicine in Farmington, Connecticut, and immediate past president of the American Society of Hypertension (ASH). His letter of support discusses the unique roles of cardiology pharmacists and the demand for specialty trained cardiology pharmacists. *As a physician specialized in the management of cardiovascular disease, I can speak extensively to the useful and necessary roles of advanced trained pharmacists in Cardiology Pharmacy Practice based on my experience working with cardiology specialized pharmacists. Pharmacists specialized in Cardiology Pharmacy Practice are multidisciplinary health care team members who play essential roles in the inpatient and outpatient setting. These individuals both serve to enhance patient care as well as to provide needed information on an ongoing basis to physicians and nurses in the hospital and ambulatory practices. They have advanced knowledge and application skills supporting the optimization of pharmacotherapy for individual patients in the primary and secondary prevention of cardiovascular disease that non-specialized pharmacists and clinicians do not otherwise have. [ASH] has recognized the key roles of advanced trained clinicians, such as cardiology specialized pharmacists, in the management of patients with hypertension and related disorders. Through this work we have recently developed the opportunity for pharmacists to become ASH Certified Hypertension Clinicians (ASH-CHC) through a rigorous process. This initiative was driven by the demand for specialty trained non-physicians such as cardiology specialized pharmacists.*

Outlining the various cardiology pharmacist contributions to the health care field, **Barbara S. Wiggins, PharmD, BCPS-AQ Cardiology, CLS, FCCP, FNLA, FAHA**, is a practicing pharmacy clinical specialist in cardiology, past chair of the Cardiology Practice and Research Network, Fellow of the American Heart Association, Fellow of National Lipid Association, and Associate of the American College of Cardiology. *As a pharmacy specialist in cardiology, the contributions that can be made to this field are unlimited. These contributions span not only patient specific services but also institutional involvement, as well as contributions at a national and even international level. Active participation in all of these facets can have a significant impact on patient care. Given the rapidly growing complexities of patients and medication therapies in the management of the cardiovascular patient, this certification is needed. The reliance upon specialized pharmacists will only continue to grow and is necessary in order to*

assure safe and effective management of this patient population.

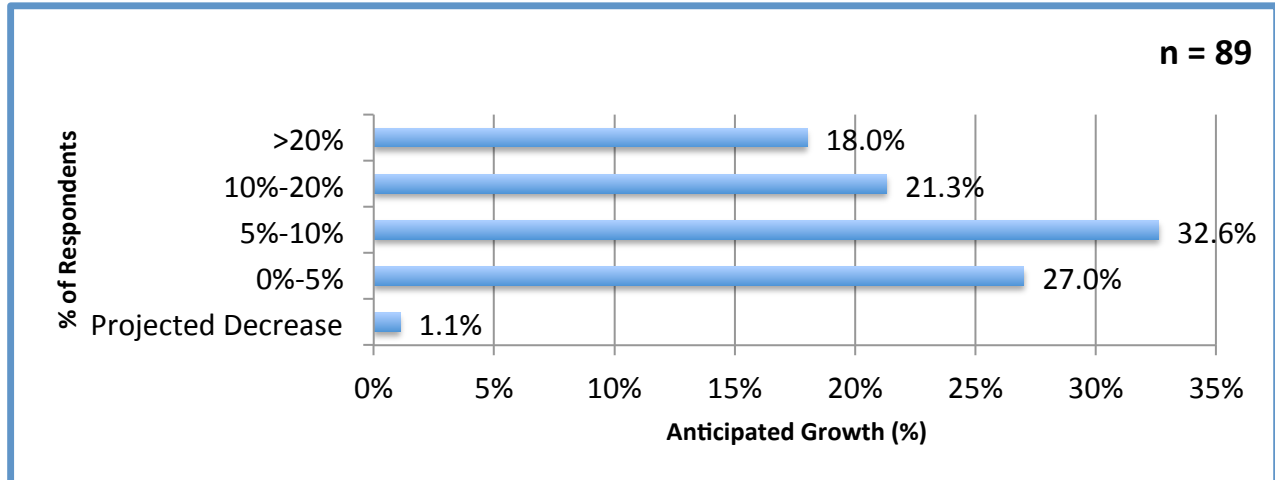
These statements are representative of the broad base of support and acceptance for recognition of cardiology clinical pharmacists and reflect the widespread and growing demand for specialized pharmacy services for cardiology patients. All letter writers indicated their support for the recognition of cardiology pharmacy practice as a specialty.

GUIDELINE 2. Include estimates of positions for pharmacists with specialized training and knowledge in the proposed specialty that are currently filled and those that are currently unfilled. Identify these positions by practice settings, if possible. Describe the sources and methods used to determine these estimates.

In an effort to estimate the number of positions for pharmacists with specialized training and knowledge in cardiology practice, the petitioning organizations conducted a survey of cardiology pharmacists. The *Survey of Cardiology Pharmacists* included a subset of questions that were completed by individuals with direct responsibility for hiring pharmacists in cardiology practice. Eighty-nine individuals completed the survey.

Responding employers were asked to provide the total number of full-time equivalents (FTEs) allocated to serving patients with CVD within their organization. Although the number of positions varied greatly (range, 0.33 to 60 allocated FTEs), the average number of FTEs across responding organizations was 6.8. Hiring managers from 86 organizations that responded indicated that they had recruited for 158 cardiology clinical pharmacists over the past 3 years and had filled more than 96% of these positions. These same employers estimate that they will fill an additional 192.5 positions over the next 3 years and currently report 61 vacant positions within their organizations. Employers also estimated the growth in the number of cardiology pharmacy positions within their organizations over the next 5 years. These results are provided in Figure B-1.

Figure B-1. Anticipated Growth in Cardiology Pharmacist Positions over the Next 5 Years



This information provided by employers of cardiology pharmacists demonstrates a consistent and growing market for cardiology specialists.

According to *U.S. News and World Report*, there are approximately 620 hospitals in the United States that provide cardiology and heart surgery to over 450 patients each year.¹¹ Pharmacists are likely engaged in supporting and enhancing these specialized services within these hospital systems, and if we use the average number of positions determined through the *Survey of Cardiology Pharmacists*, we can estimate over 4,216 positions available within hospitals that provide cardiology and heart surgery services.

Notably, the value of specialty recognition is becoming increasingly important to employers of cardiology pharmacists. Over 70% of employers responding to the *Survey of Cardiology Pharmacists* indicated that it was “highly likely,” “likely,” or “somewhat likely” that they would require a new specialty credential in cardiology if approved by the Board of Pharmacy Specialties (BPS) for newly hired pharmacists. Of those responses, over 67% indicated that it was “highly likely,” “likely,” or “somewhat likely” that they would require a new specialty credential in cardiology if approved by BPS for currently employed cardiology pharmacists. The survey also showed that only 36% of cardiology pharmacist positions currently require BPS certification or other earned credential. These results imply that a credential more targeted to the specific needs of cardiology clinical pharmacists would be in demand in the marketplace.

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CRITERION C: Number and Time

The area of specialization shall include a reasonable number of individuals who devote most of their practice to the specialty area. ***This criterion relates to the NUMBER of practitioners and the amount of TIME spent in the practice of the specialty.***

The data sources for determining the number of cardiology clinical pharmacists in practice and the proportion of time spent in this specialized area of practice include:

- The *Report of the Role Delineation Study of Cardiology Pharmacy* conducted by the Professional Examination Service on behalf of the Board of Pharmacy Specialties (BPS)
- Analysis of membership records of the American College of Clinical Pharmacy (ACCP), the American Pharmacists Association (APhA), and the American Society of Health-System Pharmacists (ASHP)
- ACCP membership survey results regarding Recognition of New Specialties administered in March 2011
- The *Survey of Cardiology Pharmacists*, administered in March 2016, which provided results from approximately 25% of cardiology pharmacists in practice

GUIDELINE 1. Estimate the number of pharmacists currently practicing in the proposed specialty. Identify the types of practice settings for these pharmacists (e.g., academic, hospital, managed health care, community). Describe the sources and methods used to determine these estimates.

Cardiology pharmacy practice has significantly grown over the past decade, as evidenced by the increased number of postgraduate year two (PGY2) specialty residency programs in cardiology pharmacy. In 2007, there were six ASHP-accredited specialty residency programs in cardiology. Today, these programs number 30, a 400% increase. Approximately 34 cardiology clinical pharmacists graduate annually from these programs. Although this is currently a slightly lower number of practitioners in comparison with other BPS specialties, the trend is toward expansion of specialty cardiology pharmacy residency programs. There are currently 48 PGY2 programs in pediatric pharmacy, 125 PGY2 programs in critical care pharmacy, 104 PGY2 programs in oncology pharmacy, 118 PGY2 programs in ambulatory care pharmacy, 58 PGY2 programs in psychiatric pharmacy, and two PGY2 programs in nutrition support pharmacy.¹

Analysis of the membership records from the petitioning organizations reveals approximately 4,660 pharmacists who self-identified as cardiology clinical pharmacists. This number certainly underestimates the actual number of practicing cardiology pharmacists since, presumably, not all cardiology pharmacists in practice are members of the petitioning organizations or have self-identified as cardiology clinical pharmacists.

The *Survey of Cardiology Pharmacists* was developed by the petitioning organizations to obtain additional quantitative data regarding workforce demand for cardiology pharmacists, proportion of time spent in cardiology practice, and education and training pathways utilized. The survey was distributed to administratively identified ACCP, APhA, and ASHP members in March 2016. The overall response rate was 25.4% (1,185 respondents), with 766 indicating current practice in cardiology. A majority of respondents (437) signed the online petition supporting specialty recognition for cardiology pharmacists. A copy of the survey instrument is attached as Appendix C-1.

Based on these survey results and the estimated percentages of pharmacists who join professional organizations, we estimate that a total of 4,200 to 4,500 pharmacists are currently engaged in specialized cardiology pharmacy practice.

Of the pharmacists surveyed, 87% indicated that they are practicing at a specialty level according to the following definition:

Definition of Cardiology Pharmacy Practice

Cardiology pharmacy practice specializes in the delivery of direct patient care services by pharmacists, as members of interprofessional health care teams, working to ensure safe and effective use of medications in patients with cardiovascular disease. These specialists focus on disease prevention and treatment, including evidence-based medication use and related care that improve both short- and long-term outcomes for patients. Cardiology specialists practice across the spectrum of care, including ambulatory, acute, and intensive care. Pharmacists in this practice review, analyze, and monitor multifaceted clinical information to make reasoned decisions for patients with multiple comorbidities and highly complex medication regimens.

The *Report of the Role Delineation Study of Cardiology Pharmacy* describes pharmacists' responses about the practice setting and their primary role within that setting. Most respondents (74%; including 32% in community hospitals, 24% in academic medical centers) practiced in an inpatient setting, while 26% practiced in ambulatory settings. Approximately 17% reported being pharmacy school faculty.²

Similarly, for the *Survey of Cardiology Pharmacists*, most respondents were hospital based (community hospital or health care system 43.2%, university-affiliated health care system 23.9%), with approximately 13% of respondents from the ambulatory care setting. Additionally, pharmacy school faculty comprised 15% of respondents.

GUIDELINE 2. For the pharmacists identified in Guideline C1, estimate the percentage of time they devote exclusively to the practice of the proposed specialty. Describe the sources and methods used to determine these estimates.

Results from the role delineation study show that respondents are highly engaged in cardiology practice, with an average of 75% of their overall work time spent focused on cardiology pharmacy practice. Approximately 55% of practice time was spent providing direct patient care to patients with cardiovascular disease.¹

The *Survey of Cardiology Pharmacists* respondents indicated hours worked per week in their cardiology practice as well as the proportion of time devoted to providing direct patient care according to the Definition of Cardiology Pharmacy Practice. Figures C-1 and C-2 demonstrate that the vast majority of cardiology clinical pharmacists practice at least 25 hours per week (61%) and provide direct patient care and services at the specialty level more than 50% of the time (70%).

Figure C-1. Hours Worked per Week in Cardiology Practice Site

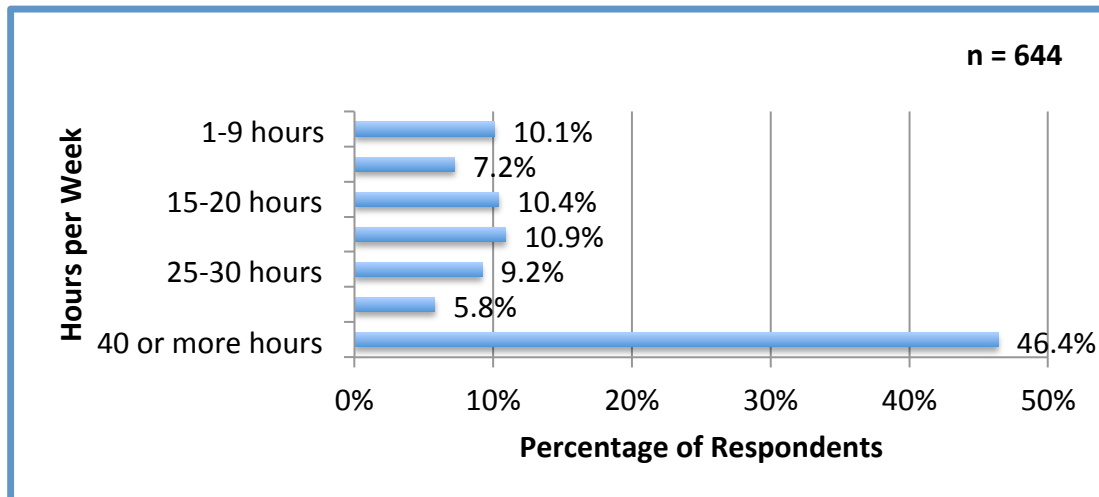
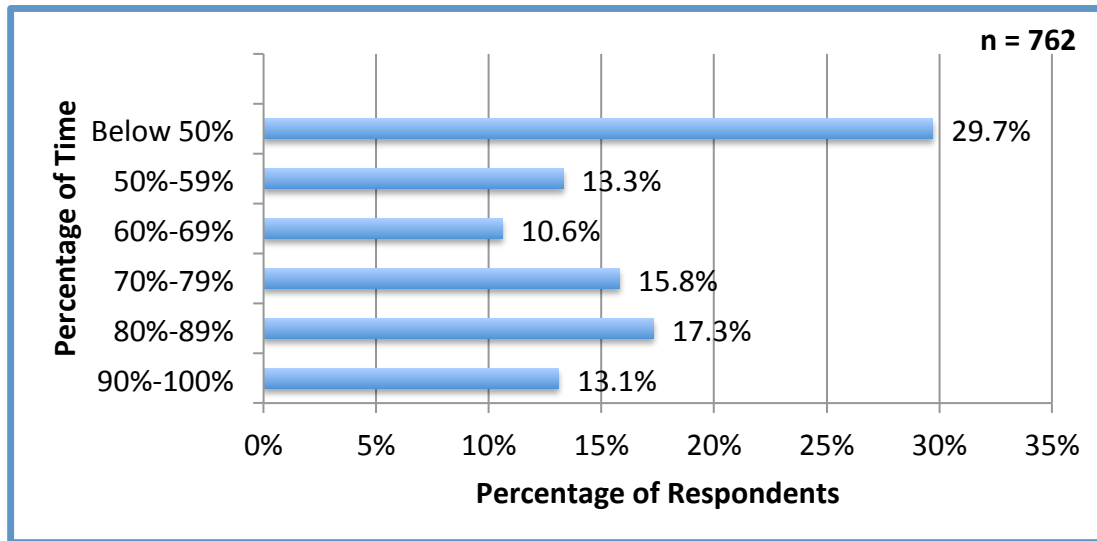


Figure C-2. Percent of Time Devoted Exclusively to Providing Direct Patient Care and Services According to the Definition of Cardiology Pharmacy Practice

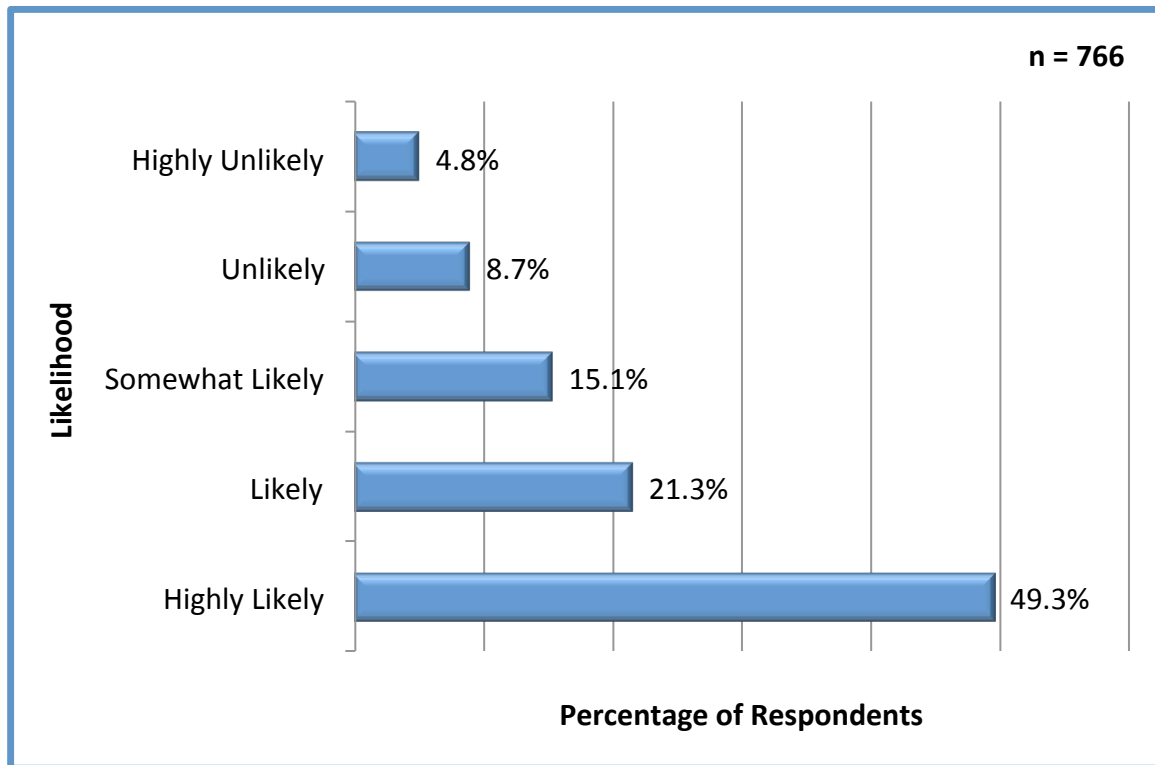


GUIDELINE 3. Estimate the number of pharmacists who would likely seek board certification in the proposed specialty during the first five years in which board certification would be available. Describe the sources and methods used to determine these estimates.

In March 2011, ACCP surveyed members to obtain feedback about recognition of new specialties (e.g., cardiology). The results suggested that recognition of specialized pharmacy practice in cardiology was needed in order to appropriately certify cardiology clinical pharmacists. Of the 1,099 respondents who were currently board certified, almost 34% believed that new BPS specialty certifications were needed. In addition, 113 respondents who were currently certified indicated they would seek specialty recognition in cardiology if BPS specialty certification were offered. An additional 252 respondents who were not board certified indicated that a new BPS specialty certification was needed to appropriately certify cardiology clinical pharmacists, and 75 of those respondents indicated they would seek specialty certification in cardiology if BPS recognized the specialty.

In addition, the *Survey of Cardiology Pharmacists* queried respondents on the likelihood they would pursue specialty certification within the next 5 years if the BPS petition to recognize cardiology pharmacy as a specialty were approved. Over 86% of respondents, or 657 pharmacists, indicated that they would be “highly likely,” “likely,” or “somewhat likely” to pursue specialty recognition in cardiology pharmacy (Figure C-3).

Figure C-3. Likelihood of Pursuing Specialty Recognition in Cardiology Pharmacy within the Next 5 Years



Since this survey presumably sampled a portion of the individuals who may be engaged in cardiology specialty practice, the number of individuals who would seek certification is possibly underrepresented. The growth and number of residency programs and the number of individuals indicating interest in certification are comparable with those of current BPS specialties. Recognition of cardiology pharmacy practice as a specialty has broad acceptance within the profession as evidenced by the petitioning organizations and will increase the number of individuals who are likely to seek certification.

References

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CRITERION D: Specialized Knowledge

The area of specialization shall be based on specialized knowledge of one or more of the pharmaceutical sciences and the biological, physical, behavioral, and administrative sciences which underlie them. Procedural or technical services and the specific environment in which pharmacy is practiced are not applicable to this criterion.

This criterion relates to SPECIALIZED KNOWLEDGE.

CRITERION E: Specialized Tasks/Skills

The area of specialization shall represent an identifiable field of pharmacy practice which requires specialized tasks/skills by the practitioner and which is distinct from other BPS-recognized pharmacy specialties. ***This criterion refers to SPECIALIZED TASKS/SKILLS.***

The Board of Pharmacy Specialties (BPS) has conducted a role delineation study for cardiology pharmacy practice and issued a call for petitions in this specialty area. Therefore, Criterion D and Criterion E are not required as part of the petition to BPS. The *Report of the Role Delineation Study of Cardiology Pharmacy* is attached as Appendix D-1.

CRITERION F: Education and/or Training

The area of specialization shall be one in which schools and colleges of pharmacy and/or other organizations offer recognized education and training programs to those seeking advanced knowledge and skills in the area of specialty practice. ***This criterion addresses EDUCATION and/or TRAINING.***

GUIDELINE 1. Describe in detail the education, post-graduate training programs and/or experience required to acquire the specialized knowledge and skills. Discuss how such education, post-graduate training programs and/or experience differ from the education, post-graduate training programs and/or experience of a recent graduate with a Doctor of Pharmacy degree.

According to the Accreditation Council for Pharmacy Education (ACPE) *Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree*, the pharmacy curriculum provides a thorough foundation in the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences. The degree program prepares graduates to:

- Enter advanced pharmacy practice experiences (APPE-ready)
- Provide direct patient care in a variety of health care settings (practice-ready)
- Contribute as a member of an interprofessional collaborative patient care team (team ready)¹

The pharmacy curriculum emphasizes optimal medication therapy outcomes and patient safety and satisfies the educational requirements for licensure. The curriculum also fosters development of knowledge, skills, attitudes, and values as well as the ability to integrate and apply learning both to the present practice of pharmacy and to the advancement of the profession. The pharmacy curriculum provides the basic education and training that graduates need to practice at a generalist level. It also provides preliminary education and training in cardiology in both acute and chronic care patients.

The ACPE standards and guidelines require a pharmacist to be knowledgeable and competent in many areas critical to the foundation and delivery of effective patient care. The standards

outline broad, general requirements for pharmacist-provided care for targeted populations, including patients with acute and chronic disease. These requirements indicate that pharmacists must be competent in pathophysiologic and pharmacotherapeutic alterations specific to special population patients for prescription and nonprescription medications, dosage calculations and adjustments, and drug monitoring for positive/negative outcomes in special populations of patients.¹

Experientially, ACPE standards require students to complete introductory pharmacy practice experiences (IPPEs) and APPEs. Furthermore, ACPE standards require that APPEs include primary, acute, chronic, and preventive care for patients of all ages and that these experiences promote practice competencies. ACPE standards do not require APPEs to specifically address the area of cardiology practice. However, some schools and colleges of pharmacy do require completion of an APPE and/or IPPE in cardiology. For other schools and colleges, elective cardiology rotations may be available; however, when unavailable, cardiology practice experience may be limited to brief encounters during inpatient, ambulatory care, or acute care medicine required rotations.

Following completion of the Doctor of Pharmacy degree program, pharmacists must pass the North American Pharmacist Licensure Examination (NAPLEX) developed by the National Association of Boards of Pharmacy. Successful performance on the NAPLEX is an indication that the candidate demonstrates the knowledge, judgment, and skills required of an entry-level pharmacist. The NAPLEX Competency Statements provide a blueprint of the topics covered on the examination. The two areas of expected competency assessed on the NAPLEX are as follows²:

- *Area 1:* Ensure Safe and Effective Pharmacotherapy and Health Outcomes
- *Area 2:* Safe and Accurate Preparation, Compounding, Dispensing, and Administration of Medications and Provision of Health Care Products

Following licensure, pharmacists can acquire the differentiated knowledge and skills required for specialized cardiology pharmacy practice by a variety of methods. These methods may include, but are not limited to:

- Doctor of Pharmacy degree, clinical work experience, and self-study
- Doctor of Pharmacy degree, postgraduate year one (PGY1) residency training, clinical work experience, and self-study
- Doctor of Pharmacy degree, PGY1 residency training, clinical and/or research fellowship programs, clinical work experience, and self-study
- Doctor of Pharmacy degree, PGY1 residency training, postgraduate year two (PGY2) specialty residency in cardiology, clinical work experience, and self-study

The most effective way to prepare for a career as a cardiology clinical pharmacist is to complete a PGY1 pharmacy residency and a PGY2 residency in cardiology. PGY2 cardiology residency programs provide the most comprehensive experiential learning opportunities in cardiology clinical pharmacy practice.

The petitioning organizations conducted a *Survey of Cardiology Pharmacists* that asked employers of cardiology pharmacists the desired level of training for pharmacists practicing in this specialty. In ranked order of preference, the responses from 89 individuals responsible for hiring within their organizations were as follows (from most desirable to least desirable):

- PGY2 residency in cardiology – 61.7%
- PGY1 pharmacy practice residency – 22.4%
- Employer-provided training – 6.7%
- None required or desired – 5.6%
- PGY2 residency in another specialty – 1.1%

The Doctor of Pharmacy degree alone does not provide knowledge of sufficient depth and breadth for cardiology pharmacists to provide specialized care. Additional education and training, clinical work experience, and study are necessary. Because cardiology is an evolving specialty, many cardiology clinical pharmacists may have obtained specialized knowledge and skills through mechanisms other than accredited residency training programs.

GUIDELINE 2. Describe in detail the nature of training programs in the area of specialty practice including their length, content and objectives.

As stated above, there are several ways in which pharmacists can acquire the knowledge and skills needed to provide a specialized practice in cardiology. The most efficient way is through an accredited PGY2 specialty residency program in cardiology pharmacy practice. In September 2015, the American Society of Health-System Pharmacists approved revised accreditation standards for PGY2 residencies. A copy of the current *Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Cardiology* is attached as Appendix F-1 and this document is currently undergoing revision. Traditionally, completion of these goals and objectives would provide the education and training needed to sit for the Board of Pharmacy Specialties certification exam.

Residency Training

PGY2 specialty residency training is an organized, directed, and accredited program that builds upon the competencies established in PGY1 residency training. The PGY2 program increases the

resident's depth of knowledge, skills, and abilities and is designed to promote accountability and best practices that prepare residents to provide comprehensive medication management and clinical leadership in a specialty area.³

PGY2 pharmacy residency programs build on Doctor of Pharmacy education and PGY1 pharmacy residency programs to contribute to the development of clinical pharmacists in advanced or specialized practice. PGY2 residencies provide residents with opportunities to function independently as practitioners by conceptualizing and integrating accumulated experience and knowledge and incorporating both into the provision of patient care that improves medication therapy. Residents who successfully complete an accredited PGY2 pharmacy residency should possess competencies that qualify them for clinical pharmacist and/or faculty positions and situate them to be eligible for attainment of board certification in the specialized practice area (when board certification for the practice area exists).³

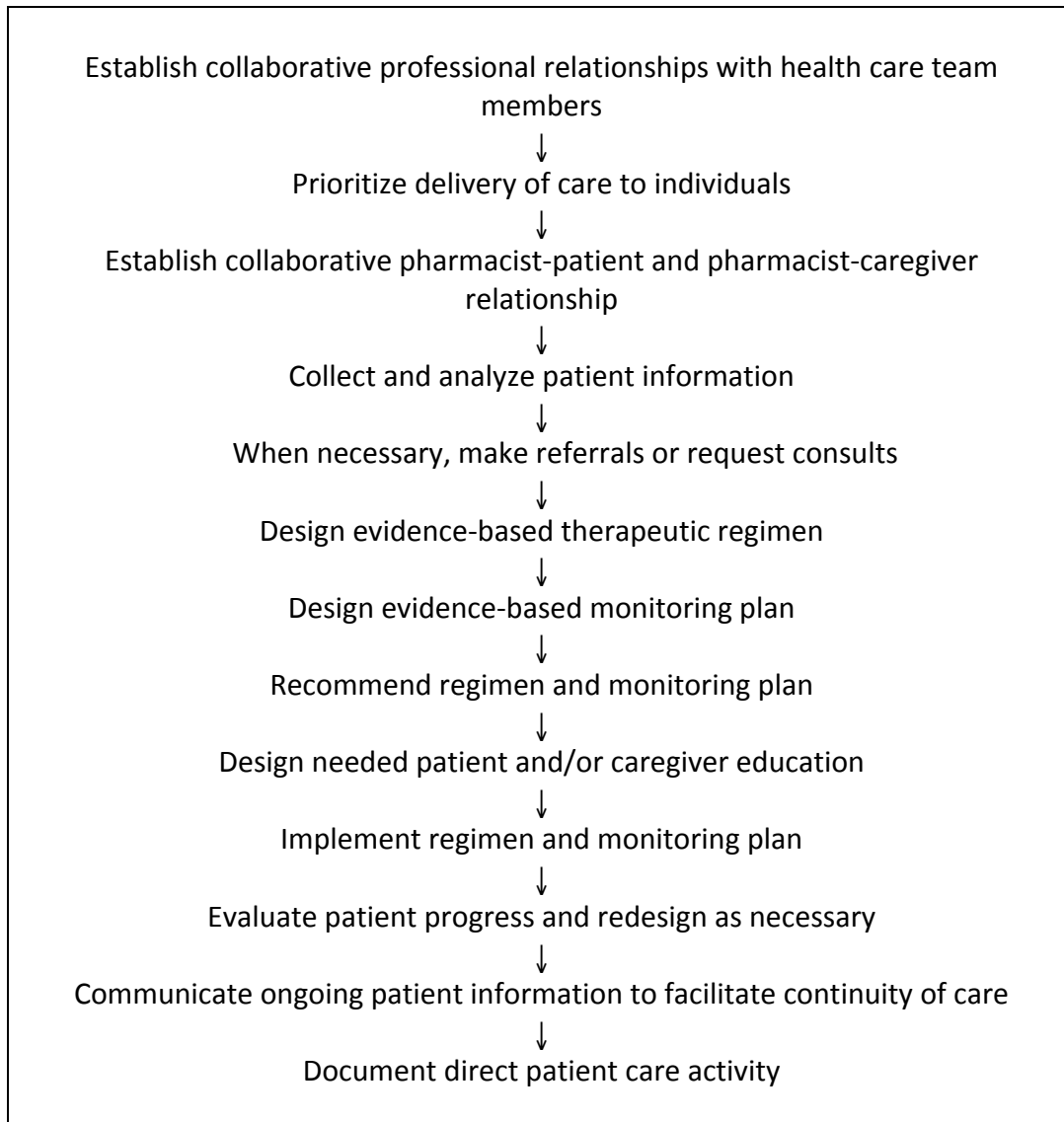
The PGY2 specialty residency in cardiology is designed to transition PGY1 residency graduates from generalized practice to specialized practice, focused on the care of patients with cardiovascular disease (CVD) and hemodynamic compromise and on the prevention of CVD. Residency graduates are equipped to participate as integral members of interdisciplinary teams caring for individuals with CVD, assuming responsibility for the patient's medication-related care. In that role, they provide the team with evidence-based, medication-related information and formulate that information into expert recommendations to the team for the use of medications and other therapeutic approaches. The wealth of a residency graduate's knowledge of CVD and treatment, combined with extensive care of individuals with these diseases, produce a pharmacist who can successfully serve health care organizations as an authoritative source on medications used to treat patients with CVD and be involved in decision making affecting patient care.³

Cardiology pharmacy residency graduates exhibit the characteristics of practice leaders. They are experienced in writing about and presenting on cardiology pharmacy-related topics. They are effective advocates for the needs of patients with CVD. They can be expected to continue their pursuit of expertise in practice; to possess advanced skills to identify the pharmacotherapy and medication-use training needs of other health care professionals caring for individuals with CVD; and to deliver effective training to those health care professionals and patients.

Required outcomes for PGY2 pharmacy residencies in cardiology include the following³:

- Outcome R1: Serve as an authoritative expert on the optimal use of medications used in the care of patients with CVD

- Outcome R2: Optimize the outcomes of patients with acute and chronic CVD in various settings through the expert provision of evidence-based, patient-centered medication therapy as an integral part of an interdisciplinary team



- Outcome R3: Demonstrate leadership and practice management skills
- Outcome R4: Manage and improve the medication-use process for patients with or at-risk for CVD
- Outcome R5: Contribute to the body of cardiovascular pharmacotherapy knowledge
- Outcome R6: Demonstrate excellence in the provision of training and educational activities for health care professionals, health care professionals in training, and the public

- Outcome R7: Participate in the management of medical emergencies

Elective educational outcomes for PGY2 pharmacy residencies in cardiology may include³:

- Outcome E1: Establish a collaborative interdisciplinary and/or interprofessional practice
- Outcome E2: Where the cardiology pharmacy practice is within a setting that allows pharmacist credentialing, successfully apply for credentialing
- Outcome E3: Demonstrate skills required to function in an academic setting
- Outcome E4: Conduct outcomes research
- Outcome E5: Demonstrate additional skills for managing and improving the medication-use process for patients with CVD
- Outcome E6: Demonstrate additional skills for serving as an authoritative resource on the optimal use of medications used in the care of patients with CVD
- Outcome E7: Demonstrate additional training and educational skills

Fellowship Training

According to the *American College of Clinical Pharmacy (ACCP) Guidelines for Clinical Research Fellowship Training Programs*, a fellowship program is a directed, individualized postgraduate training program designed to prepare the fellow to function as an independent investigator. Fellowships typically require prior completion of a master's degree or doctoral degree in a health science discipline, completion of a residency or equivalent clinical experience, and demonstrated interest or aptitude for a career in research. Fellowship programs prepare pharmacists to be competent in the scientific research process. Training is typically composed of approximately 80% research activities and 20% advanced practice activities, although this may vary by program.

Cardiology fellowship programs model other fellowships and emphasize research and practice in the cardiology setting. Fellowship experience is typically gained in protocol design; study design; data acquisition, analysis, and interpretation; grant writing; manuscript preparation; implementation of institutional review board submission; and conducting clinical and laboratory research projects. Didactic and clinical training of pharmacy students and other health care professionals is also a common component of these programs. The ultimate goal of a cardiology fellowship program is to provide the pharmacist with specialized practice experience and essential knowledge, skills, and abilities to conduct research and function as a primary investigator in cardiology.⁴

A copy of the *ACCP Guidelines for Clinical Research Fellowship Training Programs* is attached as Appendix F-2.

Other Professional Certifications

There are a number of additional credentials that can be obtained by pharmacists practicing in cardiology to expand their skills and expertise and these credentials are widely recognized by physicians and other health care providers. These certifications include:

- **Certified Diabetes Educator (CDE)** – A CDE is a health professional who possesses comprehensive knowledge of and experience in diabetes management, prediabetes, and diabetes prevention. A CDE educates and supports people affected by diabetes to understand and manage the condition. A CDE also promotes self-management to achieve individualized behavioral and treatment goals that optimize health outcomes. The National Certification Board for Diabetes Educators offers this credential. An estimated 1,350 pharmacists currently hold this credential.
- **Certified Geriatric Pharmacist (CGP)** – The Commission for Certification in Geriatric Pharmacy (CCGP) offers a voluntary certification program for pharmacists with a focus on geriatric pharmacy practice. The purpose of the CGP credential is to identify and recognize those pharmacists who have expertise and knowledge of drug therapy principles for older adults. CCGP has recognized 2,145 pharmacists with this credential.
- **Certified Hypertension Clinician (CHC)** – The American Society of Hypertension (ASH) and the ASH Specialist Program (ASP) launched a new advanced certification pathway open to clinicians at the front lines of diagnosing and treating hypertension. The CHC exam was first offered during January–February 2016 with 16 pharmacists obtaining certification in this initial offering.
- **Clinical Lipid Specialist (CLS)** – The Accreditation Council for Clinical Lipidology (ACCL) is an independent certifying organization that has developed standards and an examination in the field of clinical lipidology for health care professionals who are involved in lipid management. ACCL provides recognition and distinction in the field of clinical lipidology for health care professionals who successfully credential and complete a written examination. Currently, 54 pharmacists have the designation of CLS.

GUIDELINE 3. Provide a comprehensive listing of the programs, sponsoring organizations or institutions, locations and individuals in charge.

Table F-1 lists PGY2 cardiology pharmacy residency programs as of June 1, 2016, including 30 programs with 38 residency positions. There are also four cardiology pharmacy fellowship programs with eight positions as detailed in Table F-2 and two graduate degree programs focusing on cardiovascular pharmacotherapy as detailed in Table F-3.

Table F-1. Postgraduate Year Two Cardiology Pharmacy Residency Programs as of June 1, 2016

Sponsoring Organization	Status	City	State	Program Director	Number of Residency Positions
Abbott Northwestern Hospital	Accredited	Minneapolis	MN	Matthew P. Lillyblad	1
Baylor St. Luke's Medical Center	Accredited	Houston	TX	Maryam Bayat	1
Cleveland Clinic	Pre-candidate	Cleveland	OH	Katie M. Greenlee	1
Duke University Hospital	Accredited	Durham	NC	Kristen B. Campbell	1
Florida Hospital Orlando	Pre-candidate	Orlando	FL	Austin R. Satterthwaite	2
Hospital Corporation of America Tristar Centennial Medical Center/University of Tennessee College of Pharmacy	Candidate	Nashville	TN	Elizabeth B. McNeely	1
Intermountain Healthcare/Utah Valley Regional Medical Center	Candidate	Provo	UT	Traci Christensen	1
The Johns Hopkins Hospital	Accredited	Baltimore	MD	John Lindsley	4
Loma Linda University Medical Center	Accredited	Loma Linda	CA	Javad Tafreshi	1
Memorial Hermann–Texas Medical Center	Pre-candidate	Houston	TX	Phillip Weeks	1
Moses Cone Hospital	Candidate	Greensboro	NC	Juliette B. Cooper	1
The Ohio State University Wexner Medical Center	Accredited	Columbus	OH	Kerry Pickworth	2
Saint Joseph Hospital	Accredited	Lexington	KY	Marintha R. Short	1
Thomas Jefferson University Hospital	Accredited	Philadelphia	PA	Brandi N. Thoma	1
University of California, Davis Medical Center	Accredited	Sacramento	CA	William E. Dager	1
University of Chicago Medical Center	Accredited	Chicago	IL	Sajni V. Patel/ Elisabeth M. Simmons	1
University of Illinois at Chicago College of Pharmacy	Accredited	Chicago	IL	Robert J. DiDomenico	1
University of Kentucky HealthCare	Accredited	Lexington	KY	Tracy E. Macaulay	1
University of Maryland	Candidate	Baltimore	MD	Brent N. Reed	1

School of Pharmacy					
University of Massachusetts Memorial Medical Center	Accredited	Worcester	MA	Maichi T. Tran	3
University of Michigan Hospitals and Health Centers	Accredited	Ann Arbor	MI	Michael P. Dorsch	1
University of North Carolina Hospitals and Clinics/ UNC Eshelman School of Pharmacy	Accredited	Chapel Hill	NC	Ian B. Hollis	2
University of Oklahoma College of Pharmacy	Accredited	Oklahoma City	OK	Toni L. Ripley	1
University of Pittsburgh Medical Center Presbyterian Shadyside	Accredited	Pittsburgh	PA	James C. Coons	1
University of Southern California School of Pharmacy	Accredited	Los Angeles	CA	Tien M. H. Ng	1
Vanderbilt University Medical Center	Accredited	Nashville	TN	Daniel C. Johnson	1
Veterans Affairs Ann Arbor Healthcare System	Accredited	Ann Arbor	MI	Michael Brenner	1
Veterans Affairs Tennessee Valley Healthcare System	Accredited	Nashville	TN	Cassandra D. Bengé	1
WakeMed Health and Hospitals	Accredited	Raleigh	NC	Erin A. Ledford	1
West Palm Beach Veterans Affairs Medical Center	Accredited	West Palm Beach	FL	Augustus R. Hough	1

Table F-2. Cardiology Pharmacy Fellowship Programs

Sponsoring Organization	City	State	Program Contact	Number of Fellowship Positions	Primary Specialty	Secondary Specialty
University of Connecticut/ Hartford Hospital	Hartford	CT	C. Michael White	3	Outcomes Research	Cardiology
University of Florida	Gainesville	FL	Julie Johnson	2	Pharmacogenomics	Cardiology
University of North Carolina	Raleigh	NC	Jo Ellen Rodgers, Herb Patterson	2	Cardiology	Heart Failure Management
Western University of Health Sciences	Pomona	CA	Cynthia Jackevicius	1	Cardiology	Outcomes Research

Table F-3. Graduate Degree (PhD) Programs Focusing on Cardiovascular Pharmacotherapy

Sponsoring Organization	City	State	Program Contact	Number of Fellowship Positions	Primary Specialty	Secondary Specialty
University of Florida	Gainesville	FL	Julie Johnson	Varies	Cardiovascular Pharmacogenomics	Outcomes Research
University of North Carolina	Raleigh	NC	Craig Lee	Varies	Cardiovascular Pharmacotherapy	Outcomes Research

References

¹ Accreditation Council for Pharmacy Education. *Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree*. 2016. Accessed at <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf> on September 19, 2016.

² National Association of Boards of Pharmacy. NAPLEX blueprint and competency statements. Accessed at <http://www.nabp.net/programs/examination/naplex/naplex-blueprint/> on January 23, 2016.

³ American Society of Health-System Pharmacists. *Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Cardiology*. 2009. Accessed at <http://www.ashp.org/DocLibrary/Residents/RTP-PGY2-Cardiology.pdf> on June 7, 2016.

⁴ American College of Clinical Pharmacy. *ACCP Guidelines for Clinical Research Fellowship Training Programs*. Accessed at <https://www.accp.com/docs/positions/guidelines/pos15.pdf> on January 23, 2016.

CRITERION G: Transmission of Knowledge

The area of specialization shall be one in which there is an adequate transmission of specialized knowledge through professional, scientific and technical literature directly related to the specialty area. ***This criterion refers to the TRANSMISSION OF KNOWLEDGE.***

Transmission and dissemination of specialized knowledge in cardiology pharmacy practice occurs through formal networking groups within professional practice associations, peer-reviewed publications and periodicals, live educational programming, and enduring educational resources in print- and web-based vehicles.

Formal Networking Groups

Major health care associations have formal networking sections and groups dedicated to cardiology pharmacists. These groups foster professional interaction and provide opportunities for practice advancement through educational programming, newsletters, research networks, and leadership. As an example, networking groups that currently exist within pharmacy practice and other health care associations are shown in Table G-1.

Table G-1. Cardiology Networking Groups

Association	Networking Groups	Description
American College of Cardiology (ACC)	ACC's Cardiovascular Team Member Section	The Cardiovascular Team Member Section includes nurses, nurse practitioners, physician assistants, clinical pharmacists, cardiac rehabilitation specialists, and other team professionals with the ACC. Membership provides participants with opportunities to make a difference in cardiovascular care; network with colleagues; develop leadership skills; advance career opportunities; strengthen skills; and expand upon interests within the specialty. ACC's Cardiovascular Team Member Section has reached over 4,500 members since its inception in 2003.
American College of Clinical Pharmacy (ACCP)	Cardiology Practice and Research Network (PRN)	The Cardiology PRN advances the pharmacotherapy of cardiovascular disorders through the promotion of excellence in

		<p>education, research, and clinical practice by enhancing the knowledge, skills, and productivity of its members. The PRN's objectives are to provide a means for communication and networking among members; provide quality educational programming at national meetings; use the internet to facilitate access to information, expertise, and professional opportunities available through the PRN; and provide opportunities for collaborative research.</p> <p>ACCP's Cardiology PRN currently has more than 1,355 members.</p>
American Society of Health-System Pharmacists (ASHP)	Section of Clinical Specialists and Scientists	<p>The ASHP Section of Clinical Specialists and Scientists represents clinical experts and advocates for practice advancement and focuses on improving patient care by creating and translating scientific advances into practice. The section provides a formal mechanism for national networking among section members. This group has responsibility for planning and developing education programming, tracks, and workshops offered at ASHP meetings.</p> <p>ASHP's Section of Clinical Specialists and Scientists currently has nearly 4,200 members who have indicated an interest in cardiology pharmacy.</p>

GUIDELINE 1. Identify journals and other periodicals dealing specifically with the proposed specialty.

Journals

Issues of interest in cardiology pharmacy practice span many areas of pharmacy practice and topics in cardiology research, clinical care, and health promotion. Many cardiology pharmacy and primary care practice journals consistently publish articles highlighting evidence, outcomes, and contributions to patient care through cardiology pharmacy practice. Examples of such journals include:

- ***American Heart Journal*** – The *American Heart Journal* features primary investigation, scholarly review, and opinion articles on cardiovascular disease and medicine. Uniquely,

the journal includes study design reports, negative clinical studies, and studies regarding the organization of medical care.

- ***The American Journal of Cardiology (AJC)*** – This journal is designed for cardiovascular disease specialists and internists with a subspecialty in cardiology throughout the world. *AJC* is an independent, scientific, peer-reviewed journal of original articles that focus on the practical, clinical approach to the diagnosis and treatment of cardiovascular disease.
- ***American Journal of Cardiovascular Drugs*** – The *American Journal of Cardiovascular Drugs* includes contemporary and conventional methods of managing cardiovascular disorders. The journal contains up-to-date opinions on controversial issues and developing areas as well as reviews regarding the best cardiovascular disorder management.
- ***Cardiology*** – The American College of Cardiology (ACC) member magazine provides feature-length looks at top trends in cardiovascular medicine and innovation, profiles of influential ACC members, and news from the College and its members around the globe.
- ***Cardiovascular Drugs and Therapy*** – *Cardiovascular Drugs and Therapy* covers novel and pertinent news regarding pharmacology and therapy advances in cardiology, focusing on therapeutic agents, heart failure, hypertension, and acute myocardial infarction.
- ***Cardiovascular Therapeutics*** – This online journal (formerly *Cardiovascular Drug Reviews*) provides detailed reviews and articles focusing on cardiovascular pharmacology and clinical trials of prospective therapies. The journal includes articles on translational research; pharmacogenomics and personalized medicine; device, gene, and cell therapies; and pharmacoepidemiology.
- ***Chest*** – This monthly peer-reviewed journal from the American College of Chest Physicians features cutting-edge, original research in the multidisciplinary specialties of chest medicine, including pulmonary, critical care, and sleep medicine; thoracic surgery; cardiorespiratory interactions; and related disciplines.
- ***Circulation*** – *Circulation* contains original contributions of scientific excellence concerned with clinical and laboratory research relevant to cardiovascular disease. Clinical research, including clinical studies and trials, are from many disciplines, including cardiovascular medicine and surgery, epidemiology, radiology, and pathology. This journal issues a portfolio of subspecialty journals, including *Circulation: Arrhythmia and Electrophysiology*, *Circulation: Cardiovascular Genetics*, *Circulation: Cardiovascular Imaging*, *Circulation: Cardiovascular Interventions*, *Circulation: Cardiovascular Quality and Outcomes*, and *Circulation: Heart Failure*.
- ***Clinical Cardiology*** – This publication provides a forum for the publication of original clinical research as well as brief reviews of diagnostic and therapeutic issues in cardiovascular medicine and cardiovascular surgery.

- ***Current Problems in Cardiology*** – This monthly journal concentrates on significant clinical cardiology topics. Each issue is focused on a particular aspect of cardiology, such as a specific medication category, pathophysiology, invasive and noninvasive diagnosis, drug therapy, surgical management, and rehabilitation. Articles are supplemented with analytical insights from the editorial board.
- ***Future Cardiology*** – This publication highlights the new molecular approach to advancing cardiovascular therapy and covers major technological advances. Article topics include the following: advanced device and imaging technologies; interventional and surgical approaches; molecular basis of cardiovascular disease; new diagnostic approaches, screening, and patient stratification; “personalized medicine” in cardiology; and therapeutic overviews highlighting optimal therapy and future options.
- ***Journal of the American College of Cardiology (JACC)*** – A peer-reviewed journal covering all facets of cardiovascular disease, *JACC* includes clinical studies, papers, and editorials. This journal has a portfolio of subspecialty journals, including *JACC Basic to Translational Science*, *JACC Cardiovascular Imaging*, *JACC Cardiovascular Interventions*, *JACC Clinical Electrophysiology*, and *JACC Heart Failure*.
- ***Journal of the American Heart Association*** – This peer-reviewed journal publishes articles aimed toward health care professionals interested and involved with cardiovascular and cerebrovascular diseases, vascular and endovascular medicine, pediatric cardiology, and neurology.
- ***Journal of the American Medical Association (JAMA)*** – This publication is an international peer-reviewed general medical journal. *JAMA*’s key objective is to promote the science and art of medicine and the betterment of the public health. The *JAMA* Network family of journals includes a cardiology specialty journal and an internal medicine specialty journal.
- ***Journal of Cardiac Failure*** – This peer-reviewed journal incorporates clinical research, basic human studies, animal studies, and bench research with possible clinical applications to heart failure pathogenesis, etiology, epidemiology, pathophysiological mechanisms, assessment, prevention, and treatment.
- ***Journal of Cardiovascular Pharmacology*** – This journal is peer-reviewed and publishes articles on cardiovascular pharmacology, such as new drug development and evaluation, physiological and pharmacological bases of drug action, metabolism, drug interactions and side effects, clinical results with new and established agents, and conventional and novel methods to the prevention and treatment of cardiovascular diseases.
- ***Journal of Cardiovascular Pharmacology and Therapeutics*** – The *Journal of Cardiovascular Pharmacology and Therapeutics* includes articles, reviews, clinical studies, and international editorials for cardiologists, clinical pharmacologists, and researchers engaged in examining new cardiovascular drugs and therapies.

- ***The Journal of Heart and Lung Transplantation (JHLT)*** – This journal provides a forum for all aspects of pre-clinical and clinical science of the failing heart and lung. *JHLT* includes essential scholarly and timely information in the field of cardiopulmonary transplantation, mechanical and biological support of the failing heart, advanced lung disease (including pulmonary vascular disease), and cell replacement therapy.
- ***Therapeutic Advances in Cardiovascular Disease – Therapeutic Advances in Cardiovascular Disease*** includes peer-reviewed research and review articles for cardiovascular clinical practitioners and researchers with an emphasis on pharmacology and therapeutics.

Cardiology pharmacy columns and features are also published periodically in the *American Journal of Health-System Pharmacy (AJHP)*, *Annals of Pharmacotherapy*, *Journal of the American Pharmacists Association (JAPhA)*, *Journal of Pharmacy Practice (JPP)*, *Pharmacotherapy*, and *Pharmacy Today*, as well as many other general medical journals.

- *AJHP* is the official publication of the American Society of Health-System Pharmacists (ASHP). It publishes peer-reviewed scientific papers on contemporary drug therapy and pharmacy practice innovations in hospitals and health systems.
- *Annals of Pharmacotherapy* is an independent, peer-reviewed journal that publishes evidence-based articles on practice, research, and education. Seven cardiology pharmacists are members of its Cardiology Editorial Board.
- *JAPhA* is an official publication of the American Pharmacists Association (APhA). It provides a peer-reviewed forum for original research, review, experience, and opinion articles that link science with contemporary pharmacy practice to improve patient care.
- *JPP* is a peer-reviewed journal that offers practicing pharmacists in-depth useful reviews and research trials and surveys of new drugs and novel therapeutic approaches, pharmacotherapy reviews and controversies, pharmacokinetics, drug interactions, drug administration, adverse drug events, medication safety, pharmacy education, and other pharmacy practice topics. Special sections include cardiology key articles. This journal also publishes the American College of Clinical Pharmacy (ACCP) Cardiology Practice and Research Network (PRN) therapeutic review series.
- *Pharmacotherapy* publishes peer-reviewed, innovative scientific and professional information and knowledge that catalyze change to improve patient outcomes through optimal pharmacotherapy. The publication often focuses on advances in drug therapy for cardiology patients.
- *Pharmacy Today* is APhA's monthly magazine on medication therapy management. Articles on the topic of cardiology, including at least 28 articles in 2015, are frequently published. In 2015, the April and December issues had editorial focus themes of cardiology and lipids/anticoagulation, respectively.

Newsletters and Online Periodicals

Professional pharmacy practice associations publish a variety of print and online media that disseminate cardiology practice information. The ACCP Cardiology PRN email list service is a mechanism for sharing, obtaining, and reporting data among cardiology pharmacist members. The ASHP Section of Clinical Specialists and Scientists also hosts an email list service to facilitate communication and problem solving among members. *DrugInfoLine* is a weekly, online publication for members of APhA that publishes articles on topics, including cardiology, lipids care, and anticoagulation care.

GUIDELINE 2. Provide a select bibliography of published abstracts, articles, position papers, and white papers in the professional literature dealing with the proposed specialty.

As of June 30, 2016, 200 relevant articles related to cardiology pharmacy practice have been published in the professional literature that support the tenets of this petition. The prevalence of articles in pharmacy and medical journals focusing on cardiology pharmacy practice and patient care of complex patients by cardiology pharmacists in specialty practice provides further evidence of this emerging specialty. A bibliography of all articles and resources published on specialized cardiology pharmacy practice and related issues is attached as Appendix G-1.

GUIDELINE 3. Reference and summarize selected experimental and quasi-experimental, peer-reviewed articles demonstrating the value of the proposed specialty (if available and appropriate).

Cardiology pharmacists in a variety of settings are demonstrating and publishing positive clinical and economic outcomes resulting from effective management of cardiology patients. Their collective work provides support for the validity of this proposed specialty. A detailed overview of the top 45 pivotal articles, as determined by the cardiology experts from the petitioning organizations, is attached as Appendix G-2.

GUIDELINE 4. Describe methods of knowledge transmission through symposia, seminars, workshops, etc., and enclose representative programs concerning these activities.

The specialized knowledge required for cardiology clinical pharmacy practice is transmitted through a variety of methods, including symposia, live and web seminars, interactive workshops, and enduring resources. Each year, national and state health care associations, schools and colleges of pharmacy, and for-profit educational companies offer live and enduring

programming to disseminate the latest evidence for managing the unique needs of cardiology patients and share innovations in specialized cardiology pharmacy practice. Hundreds of hours of programs are available annually to cardiology pharmacists through local, regional, and national meetings and events; web-based programs; and online learning.

According to the Accreditation Council for Pharmacy Education (ACPE) Pharmacists’ Learning Assistance Network (PLAN) database, providers of ACPE-approved continuing pharmacy education have collectively offered more than 900 hours of cardiology programming over the past 3 years (March 1, 2013–March 1, 2016). This programming includes:

- 1,091 programs with 4,078 hours of live, knowledge-based programs. A complete listing of these ACPE-approved activities is provided as Appendix G-3.
- 182 programs with 485 hours of live, application-based programs. A complete listing of these ACPE-approved activities is provided as Appendix G-4.
- 346 programs with 910 hours of home study, knowledge-based programs. A complete listing of these ACPE-approved activities is provided as Appendix G-5.
- 81 programs with 262 hours of home study, application-based programs. A complete listing of these ACPE-approved activities is provided as Appendix G-6.

Sample program materials from select live educational activities are attached as Appendix G-7 and include programming from the following events:

- ACCP Ambulatory Care Pharmacy Preparatory Review and Recertification Course – Cardiology I and Cardiology II
- APhA Pharmacy-Based Cardiovascular Disease Risk Management Certificate Training Program

GUIDELINE 5. Provide the number of such events, included in #4 above, which occur on an annual basis, and the average total attendance at such programs.

Live, national events are one mechanism for dissemination of knowledge to cardiology pharmacists. Over the last 3 years, the three petitioning organizations have collectively hosted 71 live educational events with 14,984 certificates of credit issued across all programs. Recognizing that pharmacists attend multiple programs, the total number of certificates does not equate to the number of unique participants. The total number of certificates of credit issued reflects the strong interest in programming for cardiology pharmacists. Table G-2 outlines these programs.

Table G-2. Cardiology Pharmacy Educational Programming and Attendance

Sponsoring Organization	Cardiology Pharmacy Programming and Attendance
American College of Clinical	2013 – 3 programs; 536 certificates of credit issued

Pharmacy	2014 – 6 programs; 1,235 certificates of credit issued 2015 – 7 programs; 1,040 certificates of credit issued
American Pharmacists Association	2013 – 2 programs; 171 certificates of credit issued 2014 – 3 programs; 490 certificates of credit issued 2015 – 8 programs; 602 certificates of credit issued
American Society of Health-System Pharmacists	2013 – 9 programs; 2,604 certificates of credit issued 2014 – 16 programs; 3,554 certificates of credit issued 2015 – 17 programs; 4,752 certificates of credit issued

Other organizations, such as the ACC, the American Diabetes Association, the American Heart Association (AHA), the American Society of Hypertension, the Heart Failure Society of America (HFSA), the Heart Rhythm Society, the International Society for Heart and Lung Transplantation, and the National Lipid Association (NLA) also provide live, print, and online educational programs that are of interest to cardiology pharmacists practicing at a specialty level.

Additional Mechanisms for Dissemination of Knowledge

In addition to the methods discussed in each of the guidelines above, enduring publications and professional award programs serve an important function in the dissemination of knowledge in the proposed specialty.

Nonperiodical Publications

Many enduring publications and resources have been developed to enhance the skills and knowledge of cardiology pharmacists. Examples of such publications include:

- *Ambulatory Care Self-Assessment Program (ACSAP)* – This home study series developed by ACCP provides clinical pharmacists with pertinent therapeutic updates to enhance their practice skills and improve patient outcomes. The first book of the series is focused on cardiology. ACSAP has been approved by the Board of Pharmacy Specialties (BPS) as a professional development activity for Board Certified Ambulatory Care Pharmacist recertification and has relevance to cardiology pharmacists.
- *Applying the Pharmacists’ Patient Care Process to Hypertension Management* – APhA is collaborating with the Centers for Disease Control and Prevention (CDC) Division for Heart Disease and Stroke Prevention (DHDSPP) to create a resource that will highlight how the Joint Commission of Pharmacy Practitioners (JCPP) Pharmacists’ Patient Care Process can be utilized in the management of hypertension in the community or ambulatory care setting. The American Medical Association is also collaborating on the development of this resource to facilitate effective referrals to and from primary care

practices and appropriate training for pharmacists on self-measured blood pressure monitoring. The tentative date of availability for this resource is December 2016.

- *Cardiology Care – ACSAP 2014 Book 2* – Activities related to the prevention and management of cardiovascular disease are a constant for the ambulatory care clinical pharmacist. ACCP's *Cardiology Care ACSAP*, released in 2014, presents evidence-based updates on a wide range of these disorders.
- *Cardiology Critical Care – Critical Care Self-Assessment Program (CCSAP) 2017 Book 1* – Activities related to the management of cardiovascular disease are a constant for the critical care clinical pharmacist. ACCP's *Cardiology Critical Care CCSAP* is anticipated for release in 2017 and will present evidence-based updates on a wide range of these disorders that have relevance to cardiology pharmacy.
- *Cardiovascular Pharmacotherapy: A Point-of-Care Guide* – ASHP's pocket-sized volume, published in 2010, is intended to help in the provision of care at the bedside and to serve as a quick reference for various cardiac disease states. The book is directed specifically to pharmacists and is focused on evidence-based pharmacotherapy. Contributors to this guide include well-established pharmacists who have published previously in the field of cardiology.
- *Collaborative Practice Agreement (CPA) Template and Toolkit* – The APhA Foundation, the National Alliance of State Pharmacy Associations (NASPA), and the CDC DHDSP are working in partnership to develop a collaborative practice agreement (CPA) template that can be adapted for use throughout the United States. The toolkit will have a reference table to help pharmacists and their collaborators understand their state-specific CPA laws. The CPA template will utilize hypertension as the example condition to be managed. The tentative date of availability for this resource is December 2016.
- *Emergency Cardiovascular Pharmacotherapy: A Point-of-Care Guide* – This 2012 book published by ASHP provides a detailed, evidence-based focus on the pharmacologic agents used to manage the entire range of life-threatening cardiovascular conditions. Authored by national experts in cardiovascular pharmacotherapy, all 10 chapters meet the latest national guidelines for cardiopulmonary resuscitation and emergency cardiovascular care.
- *Pharmacist's Guide to Lipid Management* – This book provides updates and recommendations on pathophysiology, pharmacotherapy, lifestyle modification, special patient populations, and landmark clinical trials. ACCP published the second edition of this book in 2014.
- *Pharmacotherapy Self-Assessment Program (PSAP)* – This home study series from ACCP provides clinical pharmacists with pertinent therapeutic updates to enhance their practice skills and improve patient outcomes. The first book of the series, published in 2016, is focused on cardiology. PSAP has been approved by BPS as a professional

development activity for Board Certified Pharmacotherapy Specialist recertification. The 2016–2018 PSAP series will provide a minimum of 40 hours annually of continuing pharmacy education credit toward BCPS recertification.

Professional Awards

Award programs in pharmacy practice serve to enhance and recognize accomplishments of pharmacists. Several awards specifically recognize the distinguished practice of cardiology pharmacists in specialty practice (Table G-3).

Table G-3. Awards for Recognition of Excellence in Cardiology Pharmacy

Award	Description/Comments
American College of Cardiology (ACC) Distinguished Associate Award	To recognize a non-physician member whose outstanding contributions to College initiatives and the field of cardiology have encouraged and nurtured the ACC’s team approach to cardiovascular care.
American College of Clinical Pharmacy (ACCP) Cardiology Practice and Research Network (PRN) Clinical Practice Award	To recognize excellence in cardiovascular pharmacy clinical practice by an active member of the ACCP Cardiology PRN. This award is given every other year.
ACCP Cardiology PRN Junior Investigator Award	To recognize outstanding research in the area of cardiovascular pharmacotherapy of an ACCP Cardiology PRN member early (<10 years of experience) in his or her career. This award is given every other year.
ACCP Cardiology PRN Distinguished Investigator Award	To recognize significant and long-lasting research contributions (≥10 years of experience) to the field of cardiovascular pharmacotherapy by an active member of the ACCP Cardiology PRN. This award is given every other year.
ACCP Cardiology PRN Mentoring Award	To honor an active ACCP Cardiology PRN member whose outstanding teaching and guidance inspires students, residents, fellows, and others in the profession of pharmacy in a way that changed their lives. The ideal mentor is forthright, supportive, provides constructive criticism, and demonstrates indelible commitment to teaching. This award is given every other year.
ACCP Cardiology PRN Service Award	To recognize significant lifetime contributions and service to health care institutions and health care associations by an active member of the ACCP Cardiology PRN. This award is given every other year.
ACCP Cardiology PRN Outstanding Paper of the Year Award	To recognize an outstanding contribution to the biomedical literature that is relevant to pharmacy practice in the area of cardiovascular disease. The award will be given annually to the primary and senior authors of an important contribution of research relevant to cardiovascular pharmacotherapy published during the calendar year preceding the nomination deadline.
ACCP Cardiology PRN Lifetime Achievement Award	To honor an ACCP Cardiology PRN member who has consistently contributed “above and beyond” to the PRN, to cardiovascular pharmacotherapy, and to the advancement of cardiovascular clinical pharmacy practice during his or her career. Candidates for this award would often have mentored other

	cardiovascular clinical pharmacists. This award will be given annually.
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In addition, other professional awards, although not designated specifically for pharmacists in cardiology practice, have recognized cardiology pharmacists for their contributions to the profession and advancing clinical practice in cardiology. These awards, and their recipients, are outlined in Table G-4. More importantly, many pharmacists have received recognition as a fellow in various cardiology-focused medical associations including, but not limited to, AHA, ACC, HFSA, and NLA. The number of pharmacists who have received such recognition is too numerous to list herein.

Table G-4. Cardiology Pharmacist Recipients of National Professional Awards

Organization/Award	Description	Year/Recipient
American College of Clinical Pharmacy (ACCP): Clinical Practice Award	The Clinical Practice Award recognizes an ACCP member who has developed an innovative clinical pharmacy service, provided innovative documentation of the impact of clinical pharmacy services, provided leadership in the development of cost-effective clinical pharmacy services, or shown sustained excellence in providing clinical pharmacy services.	1994, Henry Bussey 1996, James McKenney 2000, Allan Ellsworth 2002, Jean Nappi 2008, William Dager 2009, Edith Nutescu 2011, Brad Boucher 2012, Ann Wittkowsky 2013, Robert Page 2016, Daniel Witt
ACCP: Education Award	The Education Award recognizes an ACCP member who has shown excellence in the classroom or clinical training site, conducted innovative research in clinical pharmacy education, demonstrated exceptional dedication to continuous professional development, or shown leadership in the development of clinical pharmacy education programs.	1999, Barry Carter 2001, Robert Talbert 2006, Jean Nappi 2014, Joseph Sasseen
ACCP: New Educator Award	The New Educator Award is scheduled to be given during ACCP's Annual Meetings. Its purpose is to recognize and honor a new educator for outstanding contributions to the discipline of teaching and to the education of health care practitioners. Nominees must be full members of ACCP at the time of nomination and a member at any level for a minimum of 3 years.	2014, Brianne Dunn 2015, Brent Reed
ACCP: New Investigator Award	The New Investigator Award is scheduled to be given during ACCP's Annual Meetings. Its purpose is to highlight the research program of an ACCP member who has made a major impact in an aspect of clinical pharmaceutical science. Nominees must have a research program with a significant publication record having a programmatic theme, or an especially noteworthy single publication. Nominees must also be a member of ACCP for a minimum of 3 years, and they must have completed their terminal pharmacy training or degree (whichever is most recent) within the past 6 years.	2001, Bradley Phillips 2005, C. Michael White 2008, Chris Aquilante 2011, Brian Overholser 2012, William Baker, Jr. 2013, Ben Van Tassell 2014, Olivia Phung 2015, Steve Smith

ACCP: Paul F. Parker Medal Award	The Paul F. Parker Medal Award recognizes an individual who has made outstanding and sustained contributions to improving or expanding the profession of pharmacy in an area of professional service, including but not limited to, patient care, leadership, administration, financial, technological, information processing, service delivery, models of care, and advocacy. The award is not limited to pharmacists or ACCP members.	2015, Robert Talbert
ACCP: Robert M. Elenbaas Service Award	The Robert M. Elenbaas Service Award is given only when a particularly noteworthy candidate is identified in recognition of outstanding contributions to the vitality of ACCP or to the advancement of its goals that are well above the usual devotion of time, energy, or material goods.	1993, Barry Carter
ACCP: Russell R. Miller Award	The Russell R. Miller Award recognizes an ACCP member who has made substantial contributions to the literature of clinical pharmacy, either in the form of a single, especially noteworthy contribution or sustained contributions over time.	1994, Jerry Bauman 2007, Robert Talbert 2010, Julie Johnson 2011, Barry Carter 2016, Rhonda Cooper-DeHoff
ACCP: Therapeutic Frontiers Lecture Award	The Therapeutic Frontiers Lecture Award honors an internationally recognized scientist whose research is actively advancing the frontiers of pharmacotherapy. Recipients need not be ACCP members.	1981, Leonard Horowitz 1993, Michael Bristow 2009, Julie Johnson 2011, Barry Carter
American Pharmacists Association (APhA): Distinguished Federal Pharmacist Award	This Award recognizes individuals who have made a significant or sustained contribution to pharmacy practice and have advanced the missions of APhA and the APhA Academy of Pharmacy Practice and Management.	2006, William Jones
APhA: Distinguished New Practitioner Award	The Distinguished New Practitioner Award was established to recognize an individual new practitioner who has demonstrated distinctive achievements in mentorship, service, and commitment to the profession of pharmacy.	2014, Brent Reed
APhA: Gloria Niemeyer Francke Leadership Mentor Award	This award recognizes an individual who has promoted and encouraged pharmacists to attain leadership positions within pharmacy through example as role model and mentor.	2014, Ralph Saroyan
APhA: Good Government Pharmacist-of-the-Year Award	This award recognizes an individual pharmacist who actively contributes to the community through his or her voluntary involvement in the political process. The government affairs activity must have raised pharmacists' awareness of the political process as well as improved service and education to the public.	2006, Matt Osterhaus
APhA: Honorary President	Honorary President in APhA is conferred by the Association upon a member who has made significant contributions to the Association.	2006-07, Samuel H. Kalman
APhA: Hugo H. Schaefer Award	The purpose of the award is to recognize an individual who has made outstanding voluntary contributions to society as well as to the profession of pharmacy and APhA.	2014, Leonard Edloe

American Society of Health-System Pharmacists: Award for Sustained Contributions	This award is made to an individual who has a track record for publishing relevant articles of consistently high quality and impact in the primary, peer-reviewed, biomedical literature over a minimum of 20 years. Emphasis is placed on the significance and impact of the nominee's contributions to the biomedical literature, rather than quantity of articles. Ten of the candidate's most significant original, peer-reviewed articles will be evaluated in this award category.	2004, Sarah A. Spinler
National Academies of Practice in the Pharmacy Academy: Distinguished Practitioner and Fellow	Elected individuals who have spent a significant portion of their professional career in the practice and direct delivery of health care services.	Jo Ellen Rodgers James Tisdale Jerry Bauman

The ASHP Best Practices Award in Health-System Pharmacy fosters the development of innovative health-system pharmacy practices and services. Projects with a cardiology focus that have received this recognition are detailed in Table G-5.

Table G-5. Cardiology Pharmacist Recipients of the American Society of Health-System Pharmacists Best Practices Award

Year	Title of Project	Team Members	Organization
2013	Implementation and Outcomes of a Pharmacist Managed Clinical Video Telehealth Anticoagulation Clinic	<ul style="list-style-type: none"> - Lakshmi G. Singh, PharmD, BCACP - Karen Korch Black, PharmD, CGP, BCACP - Mallory Accursi, PharmD - Meera R. Emjbran, PharmD, BCACP - Nnenna L. Iheagwara, PharmD, BCPS - Courtney T. Becker-Howell, MHSA - Carol B. Rudo, PharmD, BCPS 	Veterans Affairs Maryland Health Care System Baltimore, Maryland
2013	Risk of Thromboembolism, Recurrent Hemorrhage, and Death After Warfarin Therapy Interruption for Gastrointestinal Tract Bleeding	<ul style="list-style-type: none"> - Daniel M. Witt, PharmD - Thomas Delate, PhD - David A. Garcia, MD - Nathan P. Clark, PharmD - Elaine M. Hylek, MD, MPH - Walter Ageno, MD - Francesco Dentali, MD - Mark A. Crowther, MD 	Kaiser Permanente Colorado Aurora, Colorado
2012	Advancing Pharmacy Practice Through the Implementation of a Heart Failure Medication Management Clinic	<ul style="list-style-type: none"> - Maria M. Claudio, PharmD, BCPS - Qazi Halim, BS, MS - Linda Yee, PharmD - Saumya Mathew, PharmD - Elizabeth Watson, PharmD, BCPS - Wayne Gietz, MA - Ankhnu Uaskhem, MD 	Brookdale Hospital Medical Center Brooklyn, New York

2012	Proven Outcomes in Diabetic Transitions of Care for Post-operative Cardiac Surgery Patients Using Pharmacists as Providers	<ul style="list-style-type: none"> - Jan Chow, PharmD, BCPS - Kimberly Russell, PharmD, BCPS - Jennifer Tryon, PharmD, MS - Michael Barsotti, MD - Juli Adelman, RD, CDE 	PeaceHealth Southwest Medical Center Vancouver, Washington
2012	Clinical and Safety Impact of an Inpatient Pharmacist-Directed Anticoagulation Service	<ul style="list-style-type: none"> - Jessica M. Schillig, PharmD - Scott Kaatz, DO, MSc - Michael Hudson, MD - Gregory D. Krol, MD - Edward G. Szandzik, RPh, MBA - James S. Kalus, PharmD 	Henry Ford Hospital Detroit, Michigan
2011	Tight Blood Pressure Control and Cardiovascular Outcomes Among Hypertensive Patients With Diabetes and Coronary Artery Disease	<ul style="list-style-type: none"> - Rhonda M. Cooper-DeHoff, PharmD, MS - Yan Gong, PhD - Eileen M. Handberg, PhD - Anthony Bavry, MD, MPH - Scott Denardo, MD - George Bakris, MD - Carl Pepine, MD 	University of Florida Gainesville, Florida
2010	A Transition in Care Initiative: Implementation of a Pharmacy Directed Anticoagulation Program in the Orthopedic Population	<ul style="list-style-type: none"> - Lynda Thomson, PharmD, CACP - Michael Palladino, PharmD, CACP - Cindy Wordell, PharmD, BCPS, FASHP - Brian Swift, PharmD, MBA - Geno Merli, MD - Javad Parvizi, MD 	Thomas Jefferson University Hospital Philadelphia, Pennsylvania
2010	Physician and Pharmacist Collaboration to Improve Blood Pressure Control	<ul style="list-style-type: none"> - Barry L. Carter, PharmD - Gail Ardery, PhD - Jeffrey D. Dawson, ScD - Paul A. James, MD - George R. Bergus, MD - William R. Doucette, RPh, PhD - Elizabeth A. Chrischilles, RPh, PhD - Carrie L. Franciscus, MA - Yinghui Xu, MS 	University of Iowa Iowa City, Iowa
2009	Safety and Efficacy Analysis of an Inpatient Collaborative Drug Therapy Management Service for Direct Thrombin Inhibitors	<ul style="list-style-type: none"> - Heather Kokko, PharmD - Carol White, PharmD - David Taber, PharmD - Tanna Cooper, PharmD - Walt Uber, PharmD - Joseph Mazur, PharmD 	Medical University of South Carolina Medical Center Charleston, South Carolina
2008	Pharmacists Enhancing the Time to Cardiac Catheterization Laboratory and Patient Safety During Acute Myocardial Infarction Presentation to the	<ul style="list-style-type: none"> - Nicole M. Acquisto, PharmD - Daniel P. Hays, PharmD, BCPS - Rollin J. (Terry) Fairbanks, MD - Manish N. Shah, MD, MPH - Joseph Delehanty, MD 	University of Rochester Medical Center, Strong Health Rochester, New York

	Emergency Department	- Flavia Nobay, MD - Curtis E. Haas, PharmD, BCPS	
2008	Impact of Statin Dosing Intensity of Transaminase Creatine Kinase	- Krista M. Dale, PharmD - C. Michael White, PharmD - Nickole N. Henyan, PharmD - Jeffrey Kluger, MD - Craig I. Coleman, PharmD	University of Connecticut School of Pharmacy Storrs, Connecticut Hartford Hospital Hartford, Connecticut
2007	Effect of a Pharmacy Care Program on Medication Adherence and Persistence, Blood Pressure, and Low-Density Lipoprotein Cholesterol	- Jeannie K. Lee, PharmD - Karen A. Grace, PharmD - Allen J. Taylor, MD	Walter Reed Army Medical Center Washington, DC
2007	Utilizing Clinical Pharmacy Services to Reduce Rates of Venous Thromboembolism in Total Joint Replacement Surgery	- MarryAnne Cronin, PharmD - Timothy Hill, MHA, RPh - Brian Pinard, MD - Eugene S. Krauss, MD	Glen Cove Hospital Glen Cove, New York
2006	Reducing Anticoagulant Related Adverse Events: Improving Hospital Safety Infrastructures and the Impact of Pharmacist Anticoagulation Services	- Heath R. Jennings, PharmD, BCPS - Stacy Voils, PharmD, BCPS - Kevin Poe, PharmD - Marla Whitaker, PharmD - Eric Miller, PharmD - Kelly Watson, MD - Anthony Morano, MD	Saint Joseph HealthCare Lexington, Kentucky
2005	Impact of a Pharmacist-Managed Outpatient Deep Vein Thrombosis Clinic on Length of Stay and Hospital Admissions	- Julia Nickerson-Troy, MS, PharmD - Kristin Morse, PharmD - Arti Bhavsar, PharmD - Rebecca Prevost, PharmD	Celebration Health Celebration, Florida
2004	Initiation of Secondary Prevention Medications for Myocardial Infarction Using Technology-Assisted Pharmacist Intervention	- Anthony Kessels, PharmD, BCPS - Thomas Bailey, MD - Laura Noirot, BS - William C. Dunagan, MD - Erin Rachmiel, PharmD, BCPS - Rina Shah, PharmD, BCPS	Barnes-Jewish Hospital St. Louis, Missouri
2004	Intravenous Plus Oral Amiodarone, Atrial Septal Pacing, or Both Strategies to Prevent Post-Cardiothoracic Surgery Atrial Fibrillation: The Atrial Fibrillation Suppression Trial II (AFIST II)	- C. Michael White, PharmD - Michael F. Caron, PharmD - James S. Kalus, PharmD - Heidi Rose, RN - Jessica Song, PharmD - Prabashni Reddy, PharmD - Robert Gallagher, MD - Jeffrey Kluger, MD	Hartford Hospital Hartford, Connecticut
2003	Impact of Pharmacy-Led Dyslipidemia Interventions on	- Major Joseph G. Weaver - Rhonda Mangione	Patrick Air Force Base Florida

	Medication Safety and Therapeutic Failure Patients	- Captain Tamy Leung - Judy McManus	
2003	Association Between CYP2CP Genetic Variants and Anticoagulation-Related Pharmaceutical Outcomes During Warfarin Therapy	- Michelle K. Higashi, PhD - David L. Veenstra, PharmD, PhD - L. Midori Kondo, PharmD - Ann K. Wittkowsky, PharmD - Sengkeo L. Srinouanprachanh, BS - Fred M. Farin, MD - Allan E. Rettie, PhD	University of Washington Seattle, Washington
2002	Oral Amiodarone for Prevention of Atrial Fibrillation After Open-Heart Surgery, the Atrial Fibrillation Suppression Trial (AFIST): A Randomised, Placebo-Controlled Trial	- Satyendra Giri, MD - C. Michael White, PharmD - Alisha B. Dunn, PharmD - Kathy Felton, RN - Linda Freeman-Bosco, RN - Prabashni Reddy, PharmD - James P. Tsikouris, PharmD - Heather A. Wilcox, RN - Jeffrey Kluger, MD	Brigham & Women's Hospital Harvard University Boston, Massachusetts Hartford Hospital Hartford, Connecticut Northeastern University Boston, Massachusetts Texas Tech University Lubbock, Texas
1999	A Pharmacist-Run Anticoagulation Clinic	- Karen Bishop, PharmD	

Appendix B-1

Letters of Support



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Shal Jacobovitz

*The mission of the American College
of Cardiology and the American
College of Cardiology Foundation
is to transform cardiovascular care
and improve heart health.*

July 8, 2016

William Ellis, MS, R.Ph
Board of Pharmacy Specialties
2215 Constitution Avenue
NW Washington, DC 20037-2985

Dear Mr. Ellis:

I am writing this letter in support of the American College of Clinical Pharmacy/American Pharmaceutical Association/American Society of Health-System Pharmacists response to the call for petitions by the Board of Pharmacy Specialties to support the development of a board certification in cardiology.

The American College of Cardiology is a vibrant, forward-thinking professional society focused in the area of cardiovascular medicine. The College's continuous efforts to scan the healthcare environment and update and change priorities in order to make sure it remains relevant for its members and its mission is one of its greatest strengths – and one of the reasons it is recognized as a leader in the health care community and why more than 52,000 cardiovascular care providers make the ACC their professional home.

A great example of the College's forward-thinking nature was its 2007 decision to welcome clinical pharmacists as members. This was both a means of addressing the looming workforce shortage, as well as acknowledgement of the ever-increasing importance of team-based care in cardiology. This decision has made the ACC the true house of cardiovascular care it is today. More recently, the College's updated Strategic Plan, which is focused on the four strategic themes of population health, member value and engagement, purposeful education, and transformation of care, ensures we are on track to meet the needs of cardiovascular professionals around the world during a time of great change in the health care environment.

Currently, pharmacist members serve on the majority of national ACC committees and councils – supporting key College initiatives from the Annual Scientific Session to the NCDR. Key initiatives where pharmacists play a central role include, but are not limited to:

- Clinical Quality Committee: Anticoagulation Initiative Work Group
- Cardiovascular Disease In Women Committee
- Clinical Quality Committee: Surviving MI (SAMI) Implementation Work Group
- Pharmacotherapy in Older Adults with CVD Research Workshop (*NIA-funded U13 Research Conference through the ACC Geriatric Cardiology Section*)
- Journal of the American College of Cardiology Heart Failure
- Guideline For the Management of Patients With Hypertension
- LDL: Address the Risk Initiative
- Best Practices and Quality Improvement Subcommittee

As with other qualified advanced practice providers, clinical pharmacists are underutilized; a 2009 ACC survey demonstrated that many cardiologists are unfamiliar with how best to apply a nonphysician team approach to patient care. Importantly, the major application of a clinical pharmacist to direct patient care is team-centric and not independent of physicians or other licensed providers. Per the **2015 ACC Health Policy Statement on Cardiovascular Team-Based Care and the Role of Advanced Practice Providers**, to maximize the role of advanced practice providers, including pharmacists, the CV Community must have a better understanding of the training, development, utilization, and potential value they bring to the cardiovascular care team.

A board certification for pharmacists who specialize in cardiology, will provide a mechanism for further assuring their optimal use in improving CV care and practice, facilitating the communication of the latest advances, and promoting an adequate and qualified workforce in the future.

Sincerely,



Mary Norine Walsh, MD, FACC
President-Elect, American College of Cardiology



Mariell Jessup, MD

*Medical Director, Penn Heart and Vascular Center
Associate Chief-Clinical Affairs, Division of Cardiovascular Medicine
Professor of Medicine*

April 7, 2016

William Ellis, MS, RPh
Board of Pharmacy Specialties
2215 Constitution Avenue
NW Washington, DC 20037-2985

I am writing this letter in support of the American College of Clinical Pharmacy/American Pharmaceutical Association/American Society of Health-System Pharmacists response to the call for petitions by the Board of Pharmacy Specialties to expand current credentialing to include cardiology. My perspective of providing this letter is one as a practicing cardiologist as well as a Past President of the American Heart Association (AHA), and an officer of the Heart Failure Society of America.

During my time as AHA President, I became keenly aware of the many contributions that pharmacists who specialize in cardiology make to support numerous important AHA initiatives. Examples of contributions include delivering continuing education presentations at both local and national AHA meetings, disseminating research findings in poster and platform presentations at these same meetings, and serving as abstract and scientific grant reviewers. In addition, many pharmacists serve on various AHA committees including, but not limited to, those listed below.

- Council on Clinical Cardiology
- Sessions Planning Committee
- Get with the Guidelines Steering Committee
- Atrial Fibrillation Get with the Guidelines Committee
- Atrial Fibrillation Get with the Guidelines Education Committee
- Heart Failure Best Practices Webinar Committee
- Formulary Steering Committee

Importantly, cardiology pharmacists also serve on many committees for other major cardiovascular organizations including the American College of Cardiology (ACC) and Heart Failure Society of America (HFSA). For HFSA, pharmacists current serve on virtually all committees including the HFSA Executive Council, Education Committee, Guidelines Committee, Program, Publications, and Research Committees.

For AHA and ACC collectively, these cardiology pharmacists have also served as authors on both guidelines and writing groups including those for Non-ST Elevation Myocardial Infarction as well as Ischemic Heart Disease. They also serve as reviewers for the guidelines including the Atrial Fibrillation, ST-Elevation Myocardial Infarction and Non-ST Elevation Myocardial Infarction Guidelines. Pharmacists have served on the HFSA Guideline Committee as well as guidelines for other major cardiovascular organizations. Examples of such are provided in the attachment with pharmacist co-authors in bold.

Leading journals for cardiovascular disease have also benefited from the hard work of these pharmacists. Examples of such include Tien Ng, PharmD serving as Associate Editor of the Journal of Cardiac Failure, Mona Fiuzat, PharmD as Executive Editor of the Journal of the American College of Cardiology Heart Failure, and Patricia A. Uber, PharmD as the Executive Editor of the Journal of Heart and Lung Transplantation.



Mariell Jessup, MD

*Medical Director, Penn Heart and Vascular Center
Associate Chief-Clinical Affairs, Division of Cardiovascular Medicine
Professor of Medicine*

Perhaps more importantly, I maintain an active clinical practice in cardiology and rely upon the input and assistance of pharmacists who specialize in cardiology every day. In the Penn Heart and Vascular Program at the University of Pennsylvania, we rely on our pharmacists for help in our heart failure clinic and have recently hired a dedicated pharmacist for our heart transplant program. In addition, we have a dedicated pharmacist in our Coronary Care Unit and on each floor of our Intermediate Care Unit in the hospital. As a Board Certified Cardiologist, and as Chair of the Cardiovascular Board of the American Board of Internal Medicine (ABIM), I appreciate this initiative of the pharmacy community to develop a similar certification process for pharmacists. Having pharmacists board certified in this specialty area will validate for other health care providers that they are maintaining specialized knowledge of the use of cardiovascular medications. Given the rapidly growing complexities of drug therapies used to manage cardiovascular disease, this certification is warranted. Now, more than ever, the health care system is dependent on these pharmacists to assist with assuring safe and effective selection of cardiovascular medical regimens.

In closing, Board Certification for pharmacists who specialize in cardiology will provide a mechanism to assure these pharmacists are and remain experts in the optimal use of cardiovascular medications. It will support maintenance of the necessary expertise to continue to make significant contributions to the many critically important initiatives of AHA and other cardiovascular organizations. More importantly, this certification will assure the most optimal patient outcomes for the cardiovascular patients for whom we care.

Sincerely,

Mariell Jessup MD, FAHA, FACC, FESC
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University of Pennsylvania School of Medicine
Heart and Vascular Center
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April 8, 2016

William M. Ellis, BSPHarm, MS
Executive Director
Board of Pharmacy Specialties
2215 Constitution Ave., NW
Washington, DC 20037

Dear Mr. Ellis:

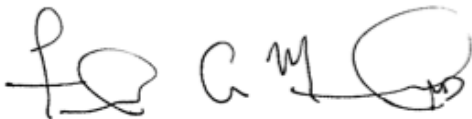
I am writing in support of the petition to the Board of Pharmacy Specialties for recognition of Cardiology Pharmacy Practice as a distinct specialty by your board. I am a practicing cardiologist at the University of Colorado in both the inpatient and outpatient settings; I have also held leadership positions in both the American Heart Association (Past Chair, Council on Quality of Care and Outcomes) and the American College of Cardiology (Chair of the National Cardiovascular Data Registry Management Board; past member of the Clinical Quality Committee). Although this letter reflects my positions, my experiences have provided me with an appreciation of the importance of pharmacists with specific expertise in cardiology.

From a clinical perspective, I know of the importance of our pharmacy team to the quality and safety of care we provide. On the inpatient service, I rely heavily on our pharmacy colleagues; it is entirely noticeable when we are not accompanied by a pharmacist and also when our team includes a pharmacist who has a strong cardiovascular background. I am struck how often the pharmacist on our team will identify a drug-drug interaction that the rest of us would have taken longer to notice or modifies a drug regimen based upon patient characteristics or the variable effectiveness of drugs within a class. Over the last decade, with the introduction of pharmacists to our teams, I believe that the care we deliver to our patients has improved significantly.

From my perspective with national organizations, I know that as the options for treatments for cardiovascular diseases have expanded, teams with a wide range of talents are critical to achieving high value, safe clinical care. We are fortunate to work in a time when the drug therapies available to us have expanded exponentially. The increasing complexity, however, increases the importance of team members with specific training in cardiovascular pharmacotherapy. I believe that the field has come to the point where a specific specialty designation in Cardiology Pharmacy will help in identifying those professionals who have the expertise to support the success of cardiovascular care teams across the spectrum of care.

Thank you for considering this petition. I believe that acting on this request will have important benefits for the delivery of care for patients with cardiovascular diseases.

Sincerely,



Frederick A Masoudi, MD, MSPH
Professor of Medicine (Cardiology)

DIVISION OF CARDIOLOGY

Department of Medicine | 12631 E. 17th Avenue, MS B130 | Aurora, CO 80045 | Phone 303 724 2089 | Fax 303 724 2094



April 7, 2016

William Ellis, MS, RPh
Board of Pharmacy Specialties
2215 Constitution Avenue
NW Washington, DC 20037-2985

Dear Mr. Ellis,

I am writing this letter in support of the American College of Clinical Pharmacy/American Pharmaceutical Association/American Society of Health-System Pharmacists response to the call for petitions by the Board of Pharmacy Specialties to expand current credentialing to include cardiology. I am writing this letter as the current President of the Heart Failure Society of America(HFSA) and as a practicing heart failure specialist who currently directs the Section of Heart Failure and Transplantation at Vanderbilt University and formerly directed the Heart Failure and Transplant section at the University of Colorado.

Throughout my practice I have benefitted enormously by the contributions of pharmacists who specialize in cardiology. They provide critical input for both the inpatient and outpatient services in heart failure, transplantation, and mechanical circulatory support. In addition they significantly enhance research in all of these areas. Pharmacists have become an integral part of the HFSA contributing to all of our committees including the Program, Education, Nominations, Research, Finance and Guidelines committee. The increasing involvement of pharmacists in our society has significantly enhanced the quality of our society and our annual meeting. Pharmacists routinely serve as speakers, research presenters and moderators at our national meeting. It has become clear that improving the collaborative nature of practice has improved the care of our heart failure patients.

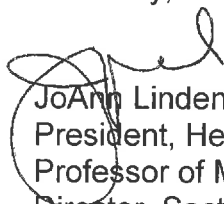
William Ellis, MS, RPh
April 7, 2016
Page Two

My experience at the HFSA has been echoed at all professional cardiology organizations, including the American College of Cardiology, the American Heart Association, the Heart Rhythm Society, and Transvascular Therapeutics. As medicine and cardiology have an increasingly large number of medications to use, pharmacy expertise has become vital. I rely on pharmacists with special expertise in cardiology to assist my practice on a daily basis. At the University of Colorado and at Vanderbilt, pharmacists with special cardiovascular expertise have become an integral part of our heart failure program in all phases—clinical, administrative and research. Indeed in both institutions, pharmacists participate extensively in the education of cardiology trainees. Pharmacists are so important that CMS has mandated specialty pharmacists in both the transplant and mechanical circulatory support programs.

The importance of pharmacy expertise is emphasized by the participation of pharmacists in a number of Editorial Boards. Some leading examples include Patricia A. Uber, PharmD as the Executive Editor of the Journal of Heart and Lung Transplantation; Tien Ng, PharmD serving as Associate Editor of the Journal of Cardiac Failure; and Mona Fiuzat, PharmD as Executive Editor of the Journal of the American College of Cardiology Heart Failure. Their expertise is vital in both the review process and in the choice of topics important to practitioners.

As a Board Certified in Specialist in Cardiovascular Diseases and Advanced Heart Failure and Transplantation myself, I appreciate this initiative of the pharmacy community to develop a similar certification process for pharmacists. Having pharmacists board certified in this specialty area signal other health care providers that they are maintaining specialized knowledge of the use of cardiovascular medications and that they can provide specialized expertise to assist in the care of their patients. I believe a cardiology certification for pharmacists will enhance the care of our patients.

Sincerely,



JoAnn Lindenfeld, MD
President, Heart Failure Society of America
Professor of Medicine
Director, Section of Heart Failure and Transplantation
Vanderbilt Heart and Vascular Institute
1215 21st Ave South
Nashville, TN 37212
Phone: 615-936-4114
Fax: 615-936-1643

April 21, 2016

William M. Ellis, BPharm, MS
Executive Director
Board of Pharmacy Specialties
2215 Constitution Ave., NW
Washington, DC 20037

Dear Mr. Ellis:

I am writing to express my support for the recognition of Cardiology Pharmacy Practice as a Specialty to the Board of Pharmacy Specialties (BPS). As the current president of the National Lipid Association (NLA) and a cardiologist I can speak extensively to the necessary role of advanced trained pharmacists in Cardiology Pharmacy Practice based on my experience working with cardiology specialized pharmacists.

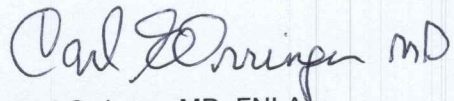
Pharmacists specialized in Cardiology Pharmacy Practice are essential multidisciplinary healthcare team members in inpatient and outpatient settings. They serve a valuable role through advanced knowledge and application skills supporting the optimization of pharmacotherapy for individual patients in the primary and secondary prevention of cardiovascular disease. The NLA is composed of physicians, pharmacists, physician assistants, dietitians, nurses, and researchers. Through this collaborative approach to the care of patients the NLA is focused on enhancing the practice of lipid management by optimizing the role of each health care discipline, especially the role of pharmacists specialized in Cardiology Pharmacy Practice.

Through my leadership role in the NLA, I have worked with several pharmacists. The NLA recognizes the key roles of advanced trained clinicians such as cardiology specialized pharmacists in the management of patients with dyslipidemia. The NLA has been in collaboration with the Accreditation Council on Clinical Lipidology in the development of the clinical lipid specialist (CLS) exam in 2006, which developed the opportunity for pharmacists in addition to other non-physician clinicians to become certified as a CLS. This process was driven by the demand for specialty trained non-physicians, many of whom are pharmacists who specialize in cardiology.

The value and importance of pharmacists specialized in Cardiology Pharmacy Practice can be highlighted by my experience working with pharmacists in clinic, research, and professional service. The essential role that such specialized pharmacists play in clinical practice, particularly in academic medical centers and VA Medical System is widely appreciated by members of our organization. Our pharmacy colleagues were key consultants in our recently published National Lipid Association Recommendations for the Patient-Centered Management of Dyslipidemia. An example of the value and importance from a professional service is that we have two past presidents of the NLA who are cardiology specialized pharmacist, James McKenney and Matthew Ito. In addition, 3 pharmacists currently serve on our NLA Board, and multiple other pharmacists are on our 5 regional chapter boards. The key role played by cardiology specialized pharmacists in the team approach to care is evident by having countless pharmacists on our NLA standing committees.

In summary, as President of the National Lipid Association, I strongly support the recognition of Cardiology Pharmacy Practice as a Specialty to the Board of Pharmacy Specialties.

Sincerely,

Handwritten signature of Carl Orringer MD in black ink.

Carl Orringer, MD, FNLA
President, National Lipid Association
Associate Professor, Division of Cardiovascular Medicine
Director of the Preventive Cardiovascular Medicine Program
University of Miami Health System

April 14, 2016

William Ellis, MS, RPh
Board of Pharmacy Specialties
2215 Constitution Avenue
NW Washington, DC 20037-2985

On behalf of UNC Health Care, we are providing this letter in support of the American College of Clinical Pharmacy/American Pharmaceutical Association/American Society of Health-System Pharmacists response to the call for petitions by the Board of Pharmacy Specialties to expand current credentialing to include cardiology. Our perspective of providing this letter is one of having decades of experience employing and working alongside board certified pharmacists who contribute in many ways to assuring optimal care of the patients we serve.

At UNC Health Care, clinical pharmacists are board certified in pharmacotherapy, ambulatory care, critical care, oncology, psychiatry and nutrition. Job postings for these positions routinely cite that board certification is preferred. Our clinical pharmacy colleagues believe that maintaining board certification serves as a critical step to assuring the highest level of clinical pharmacy services are provided. Board certified clinical pharmacists at UNC work alongside physician colleagues in both the outpatient and inpatient setting. In UNC clinics, board certified pharmacist practice as Clinical Pharmacy Practitioners in collaboration with the North Carolina Medical and Pharmacy Boards. Under a supervising physician, these pharmacists manage drug therapy including diagnosis and product selection, dosing optimization, and ordering tests as needed. These pharmacists serve in a critical capacity expanding and elevating the services our health care system can offer. On almost every inpatient service, a clinical pharmacist rounds on a daily basis with the medical team to assure safe and effective medication use.

Our board certified pharmacists have demonstrated that standardizing post-discharge care at one of the UNC clinics reduced readmissions by 65%. As cited below, this work was recently published in the Journal of General Internal Medicine and Journal of Manage Care & Specialty Pharmacy. The study also found that one 30-day readmission is avoided for every seven patients cared for under the new program. The focus of the study was an evaluation of a new post-discharge care program that includes hospital follow-up appointments conducted by clinical pharmacist practitioner and a physician. In a similar pilot study in our Family Medicine Clinics, also cited below, a pharmacist-driven intervention focused on patient education and medication reconciliation after discharge improved medication use and reduced health care resource utilization. Undoubtedly, these board certified pharmacists are making a substantial impact on achieving the best possible outcomes for our patients.

Cavanaugh JJ, Jones CD, Embree G, Tsai K, Miller T, Shilliday BB, McGuirt B, Roche R, Pignone M, DeWalt DA, Ratner S. Implementation Science Workshop: primary care-based multidisciplinary readmission prevention program. *J Gen Intern Med.* 2014; 29:798-804.

Cavanaugh JJ, Lindsey KN, Shilliday BB, Ratner SP. Pharmacist-coordinated multidisciplinary hospital follow-up visits improve patient outcomes. *J Manag Care Spec Pharm.* 2015; 21:256-60.

Hawes EM, Maxwell WD, White SF, Mangun J, Lin FC. Impact of an outpatient pharmacist intervention on medication discrepancies and health care resource utilization in posthospitalization care transitions. *J Prim Care Community Health.* 2014; 5:14-8.

Beyond direct patient care, our board certified pharmacists are instrumental in many other initiatives critical to our health care system. They play a key role in supporting research conducted with many entities within UNC including, but not limited to, the UNC Lineberger Comprehensive Cancer Center, the UNC Institute for Global Health and Infectious Disease, and the UNC Heart and Vascular Center. These pharmacists also serve as leaders both locally and nationally in various disease specific organizations including the Hematology/Oncology Pharmacy Association, American Society of Clinical Oncology, College of Psychiatric and Neurologic Pharmacists, National Alliance on Mental Illness, and the American Society of Parenteral and Enteral Nutrition.

Regarding cardiology specifically, the board certified clinical pharmacists serving our Heart & Vascular Center are leaders in patient care and beyond. These pharmacists are instrumental in guiding our physicians on safe and effective prescribing of antiarrhythmic, anticoagulant, and antiplatelet agents, and more. As required by the Centers for Medicaid and Medicare, a pharmacist contributes to managing our cardiac transplant and ventricular assist device patients including assisting with discharge education and transitions of care. They also serve as collaborators in our various cardiovascular research initiatives and have been intimately involved in both presentation and publication of these studies. They also serve as leaders in various local and national organizations. While board certification in pharmacotherapy has served our Heart & Vascular pharmacists well, they are interested in growing their professional development with additional certification in cardiology and we support this initiative. We believe board certification in cardiology will allow our Heart & Vascular pharmacists to maintain the cutting edge expertise needed to assure optimal care delivery and meaningful contributions to the many initiatives of our health care system.

In closing, the board certified clinical pharmacist of our Heart & Vascular teams assure us that expanding board certification to include cardiology will enhance their professional development. While we believe these pharmacist already maintain advanced and innovative practices, we support their desire to be at the avant-garde of their profession. Hence, we unreservedly support the petition to expand current credentialing in cardiology.

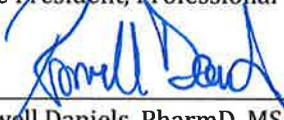
Sincerely,



Brian Goldstein, MD, MBA
Executive Vice President and Chief Operating Officer



Janet Hadar, MSN, MBA
Vice President, Professional and Support Services



Rowell Daniels, PharmD, MS
System Vice President, Pharmacy



Scott Savage, PharmD, MS
Interim Director of Pharmacy

William Ellis, MS, RPH

Board of Pharmacy Specialties

2715 CONSTITUTION AVENUE

NW WASHINGTON, DC 20037-2985

Dear Sir:

I am 74 years with a heart transplant of 16 years I received my transplant at UNC Hospitals Chapel Hill. I have had no problems at all with my health, thanks to the wonderful doctors at UNC Hospitals. They have given me all the support needed about my medications, what to take, and when to take it. I have all the trust and confidence in their evaluations and decisions. I know I would not be alive today if it was not for them.

I would like to mention some special friends over the years. [REDACTED] and [REDACTED]. I understand they are all Board Certified Pharmacists. [REDACTED] is my primary care doctor. She lowered my medication from a high volume down to only 1m of Prograf twice a day. I feel much better with this lowered dosage and am doing well.

Sincerely,
[REDACTED]



Allegheny General Hospital
320 East North Avenue
Pittsburgh, PA 15212-4772
ahn.org

April 25, 2016

William Ellis, MS, RPh
Board of Pharmacy Specialties
2215 Constitution Avenue
NW Washington, DC 20037-2985

Dear Mr. Ellis,

It is my sincere pleasure to write to you in support of the American College of Clinical Pharmacy/American Pharmaceutical Association/American Society of Health-System Pharmacists response to the call for petitions by the Board of Pharmacy Specialties to expand current credentialing to include cardiology. My background as a practicing pharmacist, prior to becoming a cardiologist, provides me with a unique perspective of the vital role of pharmacists, particularly those specializing in cardiovascular pharmacotherapy.

As an active member in both the American Heart Association (AHA) and the Heart Failure Society of America (HFSA), I have seen cardiology pharmacists participate as committee members in both organizations. For both AHA and HFSA, I have seen the important role pharmacists play serving on various councils and committees. Pharmacists have also served as invaluable contributors on various AHA and HFSA guidelines and writing groups. Personally, I have had the pleasure collaborating in research endeavors with cardiology pharmacists who were able to present study findings at both local and national AHA meetings. Overall, cardiology pharmacists are influential in advancing the many initiatives of these two organizations and we are fortunate to benefit from their many contributions.

In my current practice within the Advanced Heart Failure Program at Allegheny General Hospital, I have learned firsthand how pharmacists are vital to the care of my patients on a daily basis. Furthermore, cardiology pharmacists have been instrumental with the development and implementation of several heart failure clinics in rural areas of Pennsylvania as part of a grant through the Pennsylvania Department of Welfare.

I have also worked closely with our pharmacist in creating an iPad app for heart failure education. Their impact extended beyond the medication portion of the app and included input with respect to heart failure physiology as well as sodium and fluid restriction. It is clear in working with them on these types of projects that their knowledge and expertise enhance the entire cardiovascular community.

As pharmacotherapy continues to become more complex there is an ever-increasing need for more refined expertise to assure safe and effective of selection of treatment regimens. Board Certification for pharmacists who specialize in cardiology will provide a pathway to ensure continued expertise.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Sokos", written over a light blue horizontal line.

George G. Sokos, DO, FACC
Program Director, Advanced Heart Failure and Transplantation Cardiology Fellowship
Assistant Professor, Drexel University College of Medicine
Fellow, American College of Cardiology
Section of Heart Failure, Transplant, Mechanical Circulatory Support and Pulmonary Hypertension
Cardiovascular Institute
Allegheny General Hospital

UConn HEALTH

William M. Ellis, BSPHarm, MS
Executive Director
Board of Pharmacy Specialties
2215 Constitution Ave., NW
Washington, DC 20037

Division of Hypertension and
Clinical Pharmacology
Pat and Jim Calhoun Cardiology Center
William B. White, MD
Division Chief

April 22, 2016

Dear Mr. Ellis:

I am writing to provide my support for the recognition of Cardiology Pharmacy Practice as a Specialty to the Board of Pharmacy Specialties (BPS). I am a professor of medicine in the Cardiology Center at the University of Connecticut School of Medicine, Farmington and immediate past president of the American Society of Hypertension (ASH). As a physician specialized in the management of cardiovascular disease I can speak extensively to the useful and necessary roles of advanced trained pharmacists in Cardiology Pharmacy Practice based on my experience working with cardiology specialized pharmacists

Pharmacists specialized in Cardiology Pharmacy Practice are multidisciplinary healthcare team members who play essential roles in the inpatient and outpatient setting. These individuals both serve to enhance patient care as well as to provide needed information on an ongoing basis to physicians and nurses in the hospital and ambulatory practices. They have advanced knowledge and application skills supporting the optimization of pharmacotherapy for individual patients in the primary and secondary prevention of cardiovascular disease that non-specialized pharmacists and clinicians do not otherwise have.

Through my leadership role in ASH, pharmacists specialized in Cardiology Pharmacy Practice have become far more prominent in the Society and for many years, we have recognized the key roles of advanced trained clinicians such as cardiology specialized pharmacists in the management of patients with hypertension and related disorders. Through this work we have recently developed the opportunity for pharmacists to become ASH Certified Hypertension Clinicians (ASH-CHC) through a rigorous process. This initiative was driven by the demand for specialty trained non-physicians such as cardiology specialized pharmacists.

The accessibility of pharmacists specialized in Cardiology Pharmacy Practice is a key component to optimizing the care for patients with cardiovascular disease. Our experience has been very positive having a pharmacist specialized in Cardiology Pharmacy Practice working clinically with our healthcare teams at the University of Connecticut Health Center resulting in enhancements to education, clinical research, quality improvement and overall clinical care of our patients.

Hence, I write in enthusiastic support of the petition to recognize Cardiology Pharmacy Practice as a specialty by the Board of Pharmacy Specialties.

Sincerely,



William B. White, MD, FASH, FAHA, FACP
Professor of Medicine
University of Connecticut School of Medicine, Farmington

April 15th, 2016

William Ellis, MS, RPh
Board of Pharmacy Specialties
2215 Constitution Avenue
NW Washington, DC 20037-2985

Dear Mr. Ellis,

I am writing this letter in support of the American College of Clinical Pharmacy/American Pharmaceutical Association/American Society of Health-System Pharmacists response to the call for petitions by the Board of Pharmaceutical Specialties to expand current credentialing to include cardiology as a specialty. My perspective in providing this letter is one of a practicing Pharmacy Clinical Specialist in Cardiology, Past Chair of the Cardiology PRN, Fellow of the American Heart Association, National Lipid Association, and Associate of the American College of Cardiology. I also am a board certified pharmacotherapy specialist with added qualifications in cardiology and a clinical lipid specialist.

I have been actively involved in the field of cardiology for nearly 20 years. During this time, I have had the opportunity to do research, teach, and participate on various committees within cardiovascular associations that include the American Heart Association, American College of Cardiology, and the National Lipid Association. As a pharmacy specialist in cardiology, the contributions that can be made to this field are unlimited. These contributions span not only patient specific services but also to institutional involvement, as well as contributions at a national and even international level. Active participation in all of these facets can have a significant impact on patient care.

Physicians have come to rely more and more on the expertise of a pharmacy specialist to help provide guidance on the most optimal pharmacotherapy regimen and view them as a valued member of the patients' health-care team. Having a specialist on a team assists with complex medication management, patient and clinician medication education, and transitional care related to medications just to name a few. Providing these services helps the healthcare system as a whole to achieve optimal medication outcomes. As you can see, collaborative efforts with our physician colleagues ensures that the expertise in the diagnostic and clinical arena are aligned with the expertise of the clinical pharmacist to provide the most value to the profession and to patient care.

Outside of the team based contributions, as a cardiovascular pharmacy specialist I have assisted with institutional guideline/protocol development, achieving core measures, formulary management, cost savings, and medication safety. Guidelines and protocols are developed not only to streamline processes but also to optimize patient care and to enhance safety.

On a National Scale, some examples of my contributions include; delivery of educational programs at the local, national, and international level, presenting posters, serving on committees, serving as a journal reviewer, and contributing to the cardiovascular literature thru publications and abstract presentations. Some of these committees and activities and few examples of contributions to the literature are also attached.

Given the rapidly growing complexities of patients and medication therapies in the management of the cardiovascular patient, this certification is needed. The reliance upon specialized pharmacists will only continue to grow and is necessary in order to assure safe and effective management of this patient population.

In closing, Board Certification for pharmacists who specialize in cardiology will provide a platform to assure that these individuals are and remain experts in the field of cardiovascular pharmacotherapy. Involvement at an institutional, local, national, and international level along with the patient centered care allows specialists in this field to continue to make significant contributions to initiatives that will enhance patient care and allow for optimal patient outcomes.

Sincerely,

Barbara S. Wiggins

Barbara S. Wiggins, Pharm.D., BCPS (Added Qualifications in Cardiology), CLS, FCCP, FNLA, FAHA
Pharmacy Clinical Specialist-Cardiology
Medical University of South Carolina
Charleston SC 29425
Adjunct Professor
South Carolina College of Pharmacy
wiggib@musc.edu
843-876-5597

Some examples of my involvement with committees and various other activities as well as contributions to the literature

Section Editor – “Statin Drugs” – Current Atherosclerosis Reports

Reviewer – European Medical Journal, British Medical Journal, Journal of Clinical Lipidology, Pharmacotherapy, Clinical and Translational Science

ACCF Task Force on Clinical Expert Consensus Documents

Council on Clinical Practice – ACC – American College of Cardiology

Credentials Committee (FCCP) – American College of Clinical Pharmacy

Cardiovascular Pharmacology Committee – AHA – American Heart Association

AHA Peer Review Committee - IRG Vascular Disease Biology Sciences

Wiggins BS, Saseen JJ, Morris PB. Gemfibrozil in Combination with Statins-Is It Really Contraindicated? *Curr Atheroscler Rep* 2016;18(4):18

Wiggins BS, Northup A, Johnson D, Senfield J. Reduced Anticoagulant Effect of Dabigatran in a Patient Receiving Concomitant Phenytoin. A Case Report. *Pharmacotherapy*. February 2016.

Wiggins BS, Rodgers JE, DiDomenico RJ, Cook AM, Page RL. Discharge Counseling for Patients with Heart Failure or Myocardial Infarction: A Best Practices Model Developed by Members of the American College of Clinical Pharmacy's Cardiology Practice and Research Network Based on the Hospital to Home (H2H) Initiative. *Pharmacotherapy*. May 2013, 33(5):558-580

Buck ML, **Wiggins BS**, Sesler JM. Intraosseous Administration of Drugs in Children and Adults during Cardiopulmonary Resuscitation. *Ann Pharmacother*. 2007. Oct;41(10):1679-86.

Levine GN, Berger PB, Cohen DJ, Maree AO, Rosendfield K, **Wiggins BS**, Spinler SA. Newer Pharmacotherapies in Patients Undergoing Percutaneous Coronary Interventions. A Guide for Pharmacists and Other Health Care Professionals. Expert Opinion from the American Heart Association's Diagnostic and Interventional Catheterization Committee and Council on Clinical Cardiology, and the American College of Clinical Pharmacy's Cardiology Practice Research Network. *Pharmacotherapy*. 2006;26(11):1537-1556.

Appendix C-1

Survey of Cardiology Pharmacists

Survey of Cardiology Pharmacists Interested in Board Certification

Dear Cardiology Pharmacist:

We are contacting you regarding the Board of Pharmacy Specialties' call for petition considering cardiology as a pharmacy specialty. We kindly request that you complete this 5-10 minute survey to provide the organizations petitioning BPS with essential data to support the petition to BPS.

The American College of Clinical Pharmacy (ACCP), the American Pharmacists Association (APhA), and the American Society of Health-System Pharmacists (ASHP) have partnered to develop and submit a petition to the Board of Pharmacy Specialties (BPS) to recognize cardiology pharmacy practice as a specialty. For purposes of this petition, the definition of cardiology pharmacy practice is:

Cardiology pharmacy practice specializes in the delivery of direct patient care services by pharmacists, as members of interprofessional health care teams, working to ensure safe and effective use of medications in patients with cardiovascular disease. These specialists focus on disease prevention and treatment, including evidence-based medication use and related care that improves both short- and long-term outcomes for patients. Cardiology specialists practice across the spectrum of care, including ambulatory, acute and intensive care. Pharmacists in this practice review, analyze, and monitor multifaceted clinical information to make reasoned decisions for patients with multiple comorbidities and highly complex medication regimens.

We kindly request that you complete the survey by Wednesday, March 23, 2016. Your individual responses will be kept confidential. Collectively, all pharmacist responses will be compiled to further document the unique elements of this specialty and provide support for this specialty in a petition to the Board of Pharmacy Specialties.

At the end of the survey, you will also have an opportunity to add your signature to the petition. If questions arise, contact jskelton@silverpennies.com. Thank you for taking the time to provide this valuable information.

- Jo Ellen Rodgers, PharmD, FCCP, BCPS-AQ Cardiology; Representing the American College of Clinical Pharmacy
- Joel C. Marrs, PharmD, FCCP, FASHP, FNLA, BCPS-AQ Cardiology, BCACP, CLS; Representing the American Society of Health-System Pharmacists
- Brent Reed, PharmD, BCPS-AQ Cardiology, FAHA; Representing the American Pharmacists Association

Practicing Cardiology Pharmacists

* Indicates response required

* How many years have you been a licensed pharmacist?

- < 5 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20 years

* How many years have you been in cardiology pharmacy practice?

- I do not practice in cardiology pharmacy practice
- < 5 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20 years

*Please indicate your primary practice setting.

- Ambulatory care setting
- Community hospital
- Health care system
- University-affiliated health care system
- School of pharmacy faculty
- Other

Please indicate your secondary practice setting, if applicable.

- Ambulatory care setting
- Community hospital
- Health care system
- University-affiliated health care system
- School of pharmacy faculty
- Other

* Do you believe that you currently practice in the area of cardiology specialization as defined by the Task Group?

- Yes
- No

* On average, how many HOURS per week do you practice in your cardiology practice site?

- Full-time: 40 or more hours per week
- 31 - 39 hours per week
- 25 - 30 hours per week
- 21 - 24 hours per week

- 15 - 20 hours per week
- 10 - 14 hours per week
- 1 - 9 hours per week

* If yes, in an average week, what PERCENTAGE of your time do you estimate is devoted exclusively to providing direct patient care and services according to this definition? (Note: This may be the same as reported in the previous question; however, it may also be different. For example, you may provide additional services at your cardiology practice that are unrelated to direct patient care.)

- 90% - 100%
- 80% - 89%
- 70% - 79%
- 60% - 69%
- 50% - 59%
- 40% - 49%
- 30% - 39%
- 20% - 29%
- 10% - 19%
- 1% - 9%

* Please check all types of residencies/fellowships completed.

- PGY1 Residency - Pharmacy Practice
- PGY2 Residency - Cardiology
- PGY2 - Other Specialty
- Fellowship
- No residency or fellowship
- Other (please specify)

If PGY2 – Other Specialty; What PGY2 Residency Program did you complete?

- Ambulatory Care Pharmacy
- Cardiology Pharmacy
- Community Pharmacy
- Corporate Pharmacy Leadership
- Critical Care Pharmacy
- Drug Information
- Emergency Medicine Pharmacy
- Family Medicine
- Geriatric Pharmacy
- Health-System Corporate Pharmacy Administration
- Health-System Pharmacy Administration
- Health-System Pharmacy Administration/MS
- HIV Pharmacy
- Infectious Diseases Pharmacy
- Internal Medicine Pharmacy
- Managed Care Pharmacy System
- Medication-Use Safety

- Neonatology Pharmacy
- Nephrology Pharmacy
- Neurology Pharmacy
- Nuclear Pharmacy
- Nutrition Support Pharmacy
- Oncology Pharmacy
- Palliative Care/Pain Management Pharmacy
- Pediatric Pharmacy
- Pharmacoeconomics and Outcomes Research
- Pharmacogenetics
- Pharmacotherapy
- Pharmacy Informatics
- Pharmacy Outcomes/Health care Analytics
- Psychiatric Pharmacy
- Solid Organ Transplant Pharmacy
- Specialized Area of Pharmacy
- Transitions of Care
- Other

* If the petition to recognize cardiology pharmacy practice as a specialty is approved, how likely would you be to pursue this specialty recognition within the next 5 years?

- Highly likely
- Likely
- Somewhat likely
- Unlikely
- Highly unlikely

* Are you directly responsible for hiring cardiology pharmacists within your organization?

- Yes
- No

Cardiology Pharmacist Employers

Cardiology pharmacy practice specializes in the delivery of direct patient care services by pharmacists, as members of interprofessional health care teams, working to ensure safe and effective use of medications in patients with cardiovascular disease. These specialists focus on disease prevention and treatment; including evidence-based medication use and related care that improves both short- and long-term outcomes for patients. Cardiology specialists practice across the spectrum of care, including ambulatory, acute and intensive care. Pharmacists in this practice review, analyze, and monitor multifaceted clinical information to make reasoned decisions for patients with multiple comorbidities and highly complex medication regimens.

*What is the total number of FTEs allocated to serving patients with cardiovascular disease within your organization?

*What percentage of these pharmacists do you believe are currently practicing in the area of specialization as defined above?

*What percentage of these pharmacists practicing in the area of specialization are currently required to have advanced clinical training (e.g., residency training)?

*What percentage of these cardiology pharmacist positions currently require BPS specialty certification or other earned credentials?

*Do you have a credentialing and privileging program for pharmacists within your organization?

- Yes
- No

If yes - * Is BPS Board Certification currently a requirement for your credentialing and privileging program?

- Yes
- No

If no - * Do you anticipate that BPS Board Certification will become a requirement for your credentialing and privileging program within the next 3 years?

- Yes
- No

*How many cardiology pharmacist positions within your institution are currently vacant/unfilled?

*Please rank, in preferred order, the current desired level of training for pharmacists practicing in cardiology pharmacy in your organization. 1 = most desired; 5 = least desired

- PGY1 Residency - Pharmacy Practice
- PGY2 Residency - Cardiology
- PGY2 Residency - Other
- Employer-provided training program
- None required or desired

*If BPS recognizes cardiology pharmacy as a specialty, what is the likelihood that you would require this new specialty credential for newly hired pharmacists within your organization?

- Highly likely
- Likely
- Somewhat likely
- Unlikely
- Highly unlikely

*If BPS recognizes cardiology pharmacy as a specialty, what is the likelihood that you would require this new specialty credential for currently employed cardiology pharmacists within your organization?

- Highly likely
- Likely
- Somewhat likely
- Unlikely
- Highly unlikely

*Which of the following ranges best describes your organization's anticipated growth in the number of cardiology pharmacy specialists (as described above) over the next 5 years?

- Projected decrease
- 0%-5%
- 5%-10%
- 10%-20%
- >20%

*How many positions for cardiology pharmacy specialists (as defined above) has your organization recruited over the past 3 years, from January 1, 2013 to January 1, 2016?

*What percentage of these positions were filled?

*How many positions for cardiology pharmacy specialists (as defined above) do you estimate you will hire within the next 3 years?

*What percentage of these positions will be in:

__ ambulatory care cardiology practice

__ acute care cardiology practice

__ intensive care cardiology practice

*Please add any additional comments that would help us understand the demand for specialists in cardiology practice within your organization.

OPTIONAL: If you would like to support this recognition effort by signing the petition to BPS, please add your signature in support of this proposed specialty by completing the following information:

First Name*

Last Name*

Credentials*

Title*

Place of Employment*

Work Address*

City *

State*

Zip Code*
Work Phone Number*
Work Email Address*

* Indicates Response Required

Appendix D-1

Report of the Role Delineation Study of Cardiology Pharmacy

Report of the Role Delineation Study of Cardiology Pharmacy

Prepared for



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April 2013

Executive Summary

In 2012, the Board of Pharmacy Specialties (BPS) contracted with Professional Examination Service (ProExam) to conduct a role delineation study (RDS) of cardiology pharmacy practice. This area of pharmacy practice had been identified as a potential new BPS specialty certification.

The primary purpose of the study was to define the role of the cardiology pharmacist, in the format used to define existing BPS specialties. Additionally, if cardiology pharmacy were to become a specialty examination, the RDS also provides a basis on which content valid examinations can be developed. According to standards established by the testing industry, the mechanism for establishing the content to be assessed in a certification examination is the conduct of an RDS of the profession.

The RDS of cardiology pharmacists was undertaken in two phases: (1) development of the role delineation by subject-matter experts, and (2) conduct of a survey to validate the description of specialty practice and develop a hypothetical examination content outline.

Methodology

Development of the Description of Specialty Practice

Appointment of the Role Delineation Task Force – BPS put out a call for nominations in the spring of 2012 to assemble a diverse nominee pool from which the RDS task force was selected. In selecting the members of the role delineation task force, BPS took into consideration critical demographic and professional background variables to be represented in the group. The task force was comprised of 13 subject-matter experts representing a range of practice settings and years of experience.

Pre-Meeting Data Collection Activity – In order to begin the process of delineating cardiology-specific tasks and knowledge statements, ProExam performed a brief web-based data collection activity with the task force. Task force members were asked to describe specific tasks performed by a pharmacist specializing in cardiology as well as the specialized knowledge that a pharmacist practicing in cardiology must have in order to be effective. ProExam reviewed and synthesized the results of the pre-meeting data collection activity for use at the first meeting of the task force.

Meeting 1 of the Task Force – The role delineation task force met in Washington, DC in July 2012 for a 2-day meeting. At the meeting, ProExam facilitated a discussion regarding the most useful structure for the delineation, and the process for developing the tasks and knowledge to be included in the cardiology pharmacy role delineation. The task force adopted a four domain organizing structure for the delineation. The domains were *Patient Management and Therapeutics, Information Management and Education, Practice Development and Administration, and Public Health and Advocacy*. Tasks performed and knowledge necessary for competent practice within each of these four domains were delineated over the course of the meeting.

Post-Meeting Review – Immediately following this meeting, the role delineation was sent to all task force members for critical review. After all comments and feedback were received, task force members met for a series of virtual meetings in order to reconcile the comments and prepare a revised draft of the role delineation.

Independent Review – To support and supplement the work of the task force, an independent review procedure was implemented. Independent review is a process by which persons not involved in the initial development of the role delineation are given the opportunity to review the work in progress. A total of 12 participants were selected from the pool of nominees assembled at the outset of the study. A total of 11 independent reviewers responded, for a 92% return rate, which is an excellent response rate for this type of activity. All reviewer comments were documented for the task force and reviewed during a series of virtual meetings.

Meeting 2 of the Task Force – Meeting 2 of the task force was scheduled as a series of two virtual meetings. The purpose of these virtual meetings was to review and reconcile the feedback received from the independent reviewers. The role delineation finalized during meeting 2 of the task force consisted of 4 domains, 23 tasks, and 64 knowledge bases. The number of tasks and knowledge bases in each domain is displayed in Exhibit 1.

Exhibit 1
Structure of Cardiology Pharmacy Role Delineation

	Task Statements	Knowledge bases
Domain 1: Patient Management and Therapeutics Tasks related to the comprehensive management of a patient with or at risk for cardiovascular disease including collecting, interpreting, and integrating pertinent data; and designing, implementing, monitoring, and modifying patient-specific plans of care in collaboration with the multidisciplinary healthcare team.	9	38
Domain 2: Information Management and Education Tasks related to generation, interpretation, and dissemination of knowledge relative to cardiology and the education of practicing pharmacists and pharmacy trainees, other healthcare professionals, and other stakeholders.	5	10
Domain 3: Practice Development and Administration Tasks related to establishing, implementing, and monitoring systems and policies to optimize the care of patients with or at risk for cardiovascular disease, while advancing the practice of cardiology pharmacy.	6	9
Domain 4: Public Health and Advocacy Tasks related to providing preventive health services, public health information, and advocacy for the prevention and treatment of cardiovascular disease.	3	7
Total	23	64

Conduct of Survey to Validate the Delineation of Practice

Development of Survey Instrument – The cardiology pharmacy role delineation was validated through implementation of a web-based survey of pharmacists practicing in the specialty. The delineation of practice was assessed by using quantitative and qualitative data collection procedures. From a quantitative standpoint, rating scales were designed to measure the *frequency* of use and *importance* of the tasks; the *percentage of time* spent in each domain and the *importance* of each domain; and how *important* the knowledge is to the practice of cardiology pharmacy, as well as the *frequency of use* of the knowledge. From a qualitative standpoint, open-ended questions were developed to assess any tasks or knowledge missing from the delineation.

Conduct of Survey Pilot Test – The purpose of the pilot test was to ensure that all content and technical aspects of the survey instrument were of the highest quality and that the survey was as clear and user-friendly as possible. All task force members and independent reviewers were asked to participate in the pilot test of the survey. Therefore, a total of 22 pilot testers were sent invitations and personalized, password-protected links to the beta test version of the survey. Feedback was received from 13 participants for a return rate of about 59% — an average response rate for this type of activity. ProExam reviewed the results of the pilot test and, based on the pilot feedback, made minor adjustments to the survey in advance of the large-scale administration.

Dissemination of Survey – BPS obtained the Cardiology Pharmacy survey sample from several sources. After eliminating duplicates from across the sources, the final sample was comprised of 818 pharmacists identified as cardiology pharmacy specialists. Invitations to participate in the survey were disseminated in February 2013. In order to encourage participation, a reminder was sent to all non-respondents one week after the initial invitation. To allow for more time to complete the survey, a final e-mail communication was sent extending the deadline by one week.

Results

Return Rate – A total of 818 survey invitations were disseminated, and of these 32 could not be delivered due to invalid email addresses, leaving a valid sample size of 786. A total of 161 pharmacists completed the survey for a return rate of about 20%. This is an average return rate for not yet established credentialing programs.

Professional Background and Demographic Information – The following section provides background and demographic information regarding the cardiology pharmacists who responded to the survey.

- Respondents spent an average of 75% of their overall work time performing cardiology-related activities.
- Of the time spent focused on cardiology pharmacy practice, an average of 55% was spent providing direct patient care.
- Survey respondents had an average of 12 years of experience as a licensed pharmacist with the least being 1 year and most 40 years.

- Respondents had an average of 9 years of experience working in cardiology pharmacy, with .6% of respondents having 1-5 years of experience, 45% having 6-10 years of experience, 21% having 11-20 years of experience, and about 8% having more than 20 years of experience in the specialty.
- The practice settings that were most represented in this survey were community hospital, healthcare system (about 32%), university-affiliated health care system (24%), and school of pharmacy faculty (about 17%). No other setting was represented by more than 10% of survey respondents.
- On average, respondents reported spending 74% of their work in an *Inpatient* setting and 26% in an *Ambulatory* setting.
- Most patients were in the 18 – 64 (43%) or 65+ (56%) age categories.
- About 91% of respondents earned a Pharm. D. degree.
- About 68% indicated they completed a PGY1 residency, 26% completed a PGY2 Cardiology Residency, and 22% completed a PGY2 Residency (not in cardiology).
- Most respondents (75%) held the pharmacotherapy specialty certification and 20% of respondents held the added qualification in cardiology.
- The majority of respondents (79%) did not hold any other cardiology-related certifications

Domain Ratings – Participants were asked to make two ratings for the domains. **Percentage of time:** *Considering the time you spend focused on cardiology pharmacy-related activities, what percentage of that work time do you spend performing the tasks related to each domain?* and **Importance:** *Overall, how important are the tasks in this domain to the practice of cardiology pharmacy?*

Respondents reported spending the most time in Domain 1 – Patient Management and Therapeutics (57%), and the least time in Domain 4 – Public Health and Advocacy (5%). Twenty-three percent of their time was spent in Domain 2 – Information Management and Education, and 15% in Domain 3 – Practice Development and Administration.

Overall, the mean domain importance ratings were very high. A total of 96% of respondents selected highly important for Domain 1, and the mean rating for this domain was 4.0 on a 4-point scale. The second highest importance rating was 3.7 for Domain 2, with about 71% of respondents selecting highly important. The lowest rating was for Domain 4 (2.7 indicating moderately important).

Task Ratings and Validation Decisions – Participants were asked to make two ratings for the tasks. Mean values were generated for by assigning numerical values to each for response option. **Frequency:** *How frequently did you perform the task during the past 12 months? 1=Never, 2=Quarterly or less, 3=Monthly, 4=Weekly, 5=Daily* and **Importance:** *How important is the task to cardiology practice? 1=Not important, 2=Minimally important, 3=Moderately important, 4=Highly important.*

Of the 23 task statements, 10 received mean frequency ratings above 3.5, 5 received a mean frequency between 3.0 and 3.5, 4 received a mean frequency rating between 2.5 and 3.0, and 4 received mean ratings below 2.5.

Ten tasks received mean importance ratings of 3.5 or above, 11 received mean importance ratings between 3.0 and 3.5, and 2 received mean importance ratings below 3.0.

The task force met virtually to review the validation evidence collected in the role delineation survey. During the meeting, the task force reviewed all results of the survey, and discussed in detail those task statements that did not receive clear validation evidence. These were defined as instances where 30% or more of the respondents reported never performing the task, and/or the mean frequency rating fell below a 2.5. There was sufficient validation evidence to support inclusion of 19 of the 23 task statements in the description of cardiology specialty practice. The remaining 4 tasks were discussed in greater detail. The validation discussion regarding these 4 tasks was informed by the frequency ratings, importance ratings, considerations regarding the nature of the tasks, and the subgroup ratings. Exhibit 2 documents the validation decisions for these 6 tasks and the rationale for the decisions.

Exhibit 2
Task Validation Decisions and Rationale

Task	Validation Decision (Retain or Remove)	Rationale for Validation Decision
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	Retain	Retained based on moderate mean importance rating of 3.1 and the nature of the task – by its nature, this task would typically be performed quarterly or less, and therefore have a lower mean frequency rating.
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, treatment , screening).	Retain	Retained based on moderate mean importance rating of 3.0 and the nature of the task – by its nature, this task would typically be performed quarterly or less, and therefore have a lower mean frequency rating.
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	Retain	Retained based on moderate mean importance rating of 3.1 and the nature of the task – by its nature, this task would typically be performed quarterly or less, and therefore have a low mean frequency rating.
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	Remove	Content covered by other tasks within this domain with the addition of treatment to the example list in 4.2 (shown in red above)

Knowledge Ratings and Validation Decisions – Participants were asked to make two ratings for the knowledge bases. Mean values were generated for by assigning numerical values to each for response option. **Frequency:** *How frequently did you use the knowledge during the past 12 months? 1=Never, 2=Quarterly or less, 3=Monthly, 4=Weekly, 5=Daily* and **Importance:** *How important is the knowledge to cardiology practice? 1=Not important, 2=Minimally important, 3=Moderately important, 4=Highly important.*

Of the 64 knowledge bases, 39 received mean frequency ratings 3.5 or above, 11 received mean frequency ratings between 3.0 and 3.5, and 14 received mean frequency ratings below 3.0. Fifty-five knowledge bases received mean importance ratings above 3.0 (moderately important) and 9 received mean importance ratings below 3.0.

Task force members were asked to consider if the ratings for the knowledge bases were sufficiently high to suggest that they be included in the final, validated description of cardiology specialty practice. There was only one knowledge base that did not receive clear validation evidence; that is, 30% or more of the respondents reported *never* using the knowledge and/or the mean frequency rating fell below a 2.5. Therefore, there was sufficient validation evidence to support inclusion of 63 of the 64 knowledge bases in the description of cardiology specialty practice.

The knowledge base in question was k2.7 *knowledge of audience-specific medical writing*. This knowledge was retained based on the retention of Task 2.2 for which this knowledge is needed and the mean importance rating of about moderately (2.8).

Examination Specifications – ProExam calculated hypothetical specifications for a potential new certification examination in cardiology pharmacy based on the domain percentage of time and importance ratings. Hypothetical examination specifications are presented for the total sample and for those respondents spending less (< 50%) or more (≥ 50%) time focused on cardiology pharmacy (Exhibit 4). After examining the hypothetical, empirically-derived examination specifications, the task force deemed the percentages derived from the total survey respondent group to be the best representation of specialty practice. Thus, the recommended examination specifications for a potential new specialty certification (shown in **bold**) are the empirically derived examination specifications for the total sample.

Exhibit 4 Hypothetical Examination Specifications

	Total Sample	< 50% specialty work time	≥ 50% specialty work time
Domain 1: Patient Care and Therapeutics	59%	48%	60%
Domain 2: Education, Research and Scholarship	23%	26%	23%
Domain 3: Antimicrobial Stewardship and Practice Management	14%	18%	13%
Domain 4: Public Health and Advocacy	4%	9%	3%

Summary and Recommendations

The conduct of the role delineation study of cardiology pharmacy specialists yielded a structured description of specialty practice in terms of major domains and tasks, as well as the specialized knowledge base that supports task performance.

The results of this study provide the validity foundation for future credentialing initiatives. Should BPS decide to develop a new specialty certification in cardiology pharmacy, ProExam recommends that:

- examination items be developed to assess the specialty knowledge and tasks validated by survey respondents
- items be classified in terms of domain, task, and specialty knowledge base assessed by the item, and
- examinations be constructed to match the percentage weight examination specifications recommended by the task force.

By following this guidance, BPS will create a chain of validity evidence that that ties examination content to the role delineation study. By so doing, BPS will meet best practice recommendations and accreditation requirements for credentialing programs.

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Introduction

In 2012, the Board of Pharmacy Specialties (BPS) contracted with Professional Examination Service (ProExam) to conduct a role delineation study (RDS) of cardiology pharmacy practice. This area of pharmacy practice had been identified as a potential new BPS specialty certification. In an RDS, the domains of practice and associated tasks are defined for the professional role under consideration, and the knowledge bases required to perform the defined tasks of the specialty are articulated.

The primary purpose of the study reported herein was to define the role of the cardiology pharmacist, in the format used to define existing BPS specialties. In particular, the RDS was conducted in order to delineate the tasks performed by the pharmacists specializing in cardiology within broad domains of practice, and to identify the specialized (i.e., beyond licensure) knowledge bases needed to perform the delineated tasks.

If cardiology pharmacy were to become a specialty examination, the RDS also provides a valid basis on which examinations can be developed. According to standards established by the testing industry, the mechanism for establishing the content to be assessed in a certification examination is the conduct of an RDS of the profession. Conduct of RDSs is required in order to meet the certification program accreditation requirements of the American National Standards Institute (ANSI).

The RDS of cardiology pharmacists was undertaken in two phases: (1) development of the role delineation by subject-matter experts, and (2) conduct of a survey to validate the description of specialty practice and develop the hypothetical examination content outline.

Methodology

Phase 1 – Development of the Description of Specialty Practice

Appointment of the Role Delineation Task Force

To assemble a diverse nominee pool from which to assemble the role delineation task force and appoint subject-matter experts to participate in other aspects of the study, BPS put out a call for nominations in the spring of 2012.

An online questionnaire was created to capture information about volunteers needed to fill various roles in the RDS process. In addition to identifying the activities for which the nominee was willing to participate, BPS collected professional background information about each nominee, including percentage of time spent in the specialty of cardiology pharmacy, work setting, and years of experience. For additional description of the online data collection instrument and the activities for which nominees could volunteer, see Appendix 1. BPS received 83 nominations, and reviewed the CVs of all nominees prior to the selection of the task force.

In selecting the members of the role delineation task force, BPS took into consideration critical demographic and professional background variables to be represented in the group. The task force was comprised of 13 subject-matter experts representing a range of practice settings and years of experience.

Pre-Meeting Data Collection Activity

Prior to the first meeting of the task force, ProExam conducted a data collection activity with the task force members. In order to begin the process of delineating cardiology-specific tasks and knowledge bases, ProExam created a brief web-based form to collect initial data regarding potential content for the cardiology pharmacy specialty role delineation. Task force members were asked to describe specific tasks performed by a pharmacist specializing in cardiology as well as the specialized knowledge that a pharmacist practicing in cardiology must have in order to be effective.

ProExam provided the task force members with a resource manual describing role delineation terminology and procedures. Task force members were instructed to review the resource manual prior to completing the data collection activity. Additional guidance was also provided throughout the online data collection form. See Appendix 2 for screen captures of this data collection form.

ProExam reviewed and synthesized the results of the pre-meeting data collection activity for use at the first meeting of the task force. The domains, tasks, and knowledge bases produced during the pre-meeting data collection activity served as a starting point for the development of the cardiology pharmacy role delineation.

Meeting 1 of the Task Force

In order to define the tasks and knowledge specific to the practice of cardiology pharmacy, the role delineation task force met in Washington, DC in July 2012 for a 2-day meeting. See Appendix 3 for a list of meeting attendees.

At the meeting, ProExam facilitated a discussion regarding the most useful structure for the delineation, and the process for developing the tasks and knowledge to be included in the cardiology pharmacy role delineation. The task force adopted a four domain organizing structure for the delineation. The domains were *Patient Management and Therapeutics*, *Information Management and Education*, *Practice Development and Administration*, and *Public Health and Advocacy*. Tasks performed and knowledge necessary for competent practice within each of these four domains were delineated over the course of the meeting.

Immediately following this meeting, the role delineation was sent to all task force members for critical review. Task force members were asked to (1) provide solutions for any outstanding issues, (2) ensure that all tasks and knowledge required for effective practice were included in the delineation, (3) confirm that each statement was delineated as accurately and concisely as possible, and (4) ensure that each knowledge statement could be matched to at least one task statement and that a complete set of required knowledge had been identified for each task

statement. Task force members then met for a series of virtual meetings in order to reconcile the comments and prepare a revised draft of the role delineation. This document was then disseminated to additional cardiology pharmacists for review and comment.

Conduct of Independent Review

To support and supplement the work of the task force, an independent review procedure was implemented. Independent review is a process by which persons not involved in the initial development of the role delineation are given the opportunity to review the work in progress. This review ensures that a fresh perspective is brought to bear on the ongoing work of the task force.

A total of 12 participants were selected from the pool of nominees assembled at the outset of the study. Selections were made so as to represent a range of areas of practice settings and experience. Reviewers were asked to evaluate the delineation for comprehensiveness, redundancy, clarity, consistency, and sequence. Appendix 4 contains a copy of the detailed instructions provided for performing the review.

A reminder e-mail was sent to reviewers prior to the submission deadline in order to encourage participation. A total of 11 independent reviewers responded, for a 92% return rate, which is an above average response rate for this type of activity.

All reviewer comments were documented for the task force and reviewed during a series of virtual meetings with the task force.

Meeting 2 of the Task Force

Meeting 2 of the task force was scheduled as a series of two virtual meetings. One week prior to the first of these meetings, ProExam sent the members of the task force the results of the independent review of the cardiology role delineation.

Task force members, after thoughtful discussion, were able to make decisions regarding all suggested edits to the tasks and knowledge bases, and finalized the delineation of practice in preparation for a validation survey of pharmacists practicing in the cardiology specialty. The role delineation finalized during meeting 2 of the task force consisted of 4 domains, 23 tasks, and 64 knowledge bases. The number of tasks and knowledge bases in each domain is displayed in Table 1.

Table 1
Structure of Cardiology Pharmacy Role Delineation

	Task Statements	Knowledge bases
Domain 1: Patient Management and Therapeutics Tasks related to the comprehensive management of a patient with or at risk for cardiovascular disease including collecting, interpreting, and integrating pertinent data; and designing, implementing, monitoring, and modifying patient-specific plans of care in collaboration with the multidisciplinary healthcare team.	9	38
Domain 2: Information Management and Education Tasks related to generation, interpretation, and dissemination of knowledge relative to cardiology and the education of practicing pharmacists and pharmacy trainees, other healthcare professionals, and other stakeholders.	5	10
Domain 3: Practice Development and Administration Tasks related to establishing, implementing, and monitoring systems and policies to optimize the care of patients with or at risk for cardiovascular disease, while advancing the practice of cardiology pharmacy.	6	9
Domain 4: Public Health and Advocacy Tasks related to providing preventive health services, public health information, and advocacy for the prevention and treatment of cardiovascular disease.	3	7
Total	23	64

Phase 2 – Conduct of Survey to Validate the Delineation of Practice

Development of Survey Instrument

The cardiology pharmacy role delineation was validated through implementation of a web-based survey of pharmacists practicing in the specialty. The delineation of practice was assessed by using quantitative and qualitative data collection procedures. From a quantitative standpoint, rating scales were designed to measure the *frequency* of use and *importance* of the tasks; the *percentage of time* spent in each domain and the *importance* of each domain; and how *important* the knowledge is to providing effective care to cardiology patients, as well as the *frequency of use* of the knowledge. From a qualitative standpoint, open-ended questions were developed to assess any tasks or knowledge missing from the delineation.

The specific rating scales used in the survey follow.

Tasks

Frequency **How frequently did you perform the task during the past 12 months?**

1=Never, 2=Less than monthly, 3=About monthly, 4=About weekly, 5=About daily

Importance **How important is the task to the practice of cardiology pharmacy?**

1=Not important, 2=Minimally important, 3=Moderately important, 4=Highly important

Domains

% of Time **Considering the time you spend in cardiology pharmacy related activities, what percentage of that work time do you spend performing the tasks related to each domain?**

Importance **Overall, how important are the tasks included in this domain to the practice of cardiology pharmacy?**

1=Not important, 2=Minimally important, 3=Moderately important, 4=Highly important

Knowledge

Frequency **How frequently did you use the knowledge during the past 12 months?**

1=Never, 2=Less than monthly, 3=About monthly, 4=About weekly, 5=About daily

Importance **How important is the knowledge to the practice of cardiology pharmacy?**

1=Not important, 2=Minimally important, 3=Moderately important 4=Highly important

Screen captures of the validation survey can be found in Appendix 5.

Conduct of Survey Pilot Test

After the role delineation was incorporated into the online survey instrument, a pilot test was conducted. The purpose of the pilot test was to ensure that all content and technical aspects of the survey instrument were of the highest quality and that the survey was as clear and user-friendly as possible.

All task force members and independent reviewers were asked to participate in the pilot test of the survey. Therefore, a total of 22 pilot testers were sent invitations and personalized, password-protected links to the beta test version of the survey. Pilot testers were asked to provide feedback regarding clarity of instructions, utility of rating scales, technical difficulties,

and time to complete, as well as make any additional suggestions or comments to improve the survey experience. For a copy of the invitation sent to pilot testers, see Appendix 6.

Feedback was received from 13 participants for a return rate of about 59% — an above average response rate for this type of activity. ProExam reviewed the results of the pilot test and, based on the pilot feedback, made minor adjustments to the survey in advance of the large-scale administration.

Sampling Plan and Dissemination of Survey

BPS obtained the Cardiology Pharmacy survey sample from several sources. After eliminating duplicates from across the sources, the final sample was comprised of 818 pharmacists identified as cardiology pharmacy specialists.

In collaboration with BPS, ProExam developed survey invitation letters and reminders to be sent to the sample of specialty pharmacists selected for the survey. These e-mail communications were designed to inform potential participants of the purpose of the validation survey and to encourage them to respond.

Invitations to participate in the survey were disseminated in February 2013. Each invitation e-mail included an embedded, customized link containing a unique password to the survey. The use of the password permitted recipients to start and stop the survey without loss of data; that is, the survey could be completed only one time, but across multiple sessions.

In order to encourage participation, a reminder was sent to all non-respondents one week after the initial invitation. To allow for more time to complete the survey, a final e-mail communication was sent extending the deadline by one week. Copies of all e-mail communications can be found in Appendix 7.

As incentive to participate, all survey participants could elect to be entered into a prize drawing to win one of four \$50 Amazon.com gift cards.

Results of the Survey of Cardiology Pharmacy Practice

Return Rate

A total of 818 survey invitations were disseminated, and of these 32 could not be delivered due to invalid email addresses or declined participation because they were not in the specialty, leaving a valid sample size of 786. As seen in Table 2, a total of 161 Cardiology pharmacists completed the survey for a return rate of about 20%. This is an above average return rate for not yet established credentialing programs.

Table 2
Survey Return Rate

Number of Invitations	Invalid	Valid Sample Size	Number of Responses	Return Rate
818	32	786	161	20%

Professional Background and Demographic Information

The following section provides background and demographic information regarding the cardiology pharmacists who responded to the survey.

As seen in Table 3, respondents were highly engaged in the specialty of cardiology pharmacy with an average of 75% of their work time spent providing pharmacy services to cardiology patients.

Table 3
On average, what percentage of your overall work time do you spend performing cardiology pharmacy-related activities?

Mean	Median	Minimum	Maximum	Mode	SD
75%	80%	5%	100%	100%	(25.0)

Table 4 shows the percentage of work time spent in cardiology pharmacy-related activities. This presentation expands upon Table 3. Here we see that only 2 respondents (1.2%) spent 10% or less of their time, 11 respondents (6.8%) spent 11-25% of their time, 21 respondents (13%) spent 26-50% of their time, 35 respondents (21.7%) spent 51-75% of their time, and 92 respondents (57.1%) spent 76-100% of their time in cardiology pharmacy-related activities.

Table 4
Percentage of work time spent in cardiology pharmacy-related activities

0%		1-10%		11-25%		26-50%		51-75%		76-100%	
N	%	N	%	N	%	N	%	N	%	N	%
0	0%	2	1.2%	11	6.8%	21	13.0%	35	21.7%	92	57.1%

Of the time spent providing pharmacy services to cardiology patients, an average of 55% was spent providing direct patient care (Table 5). Table 6 shows the percentage of time distribution providing direct patient care. There was a good distribution across percentage ranges.

Table 5
Of this time, what percent is spent providing *direct* patient care?

Mean	Median	Minimum	Maximum	Mode	SD
55%	50%	0%	100%	50%	(27.2)

Table 6
Time spent providing direct patient care

0%		1-10%		11-25%		26-50%		51-75%		76-100%	
N	%	N	%	N	%	N	%	N	%	N	%
0	0%	5	3.1%	22	13.7%	50	31.1%	42	26.1%	37	23.0%

Survey respondents had an average of 12 years of experience as a licensed pharmacist with the least being 1 year and most 40 years (Table 7). There was a good distribution of respondents across the spectrum of years of experience from 1 year to more than 20 years as a licensed pharmacist (Table 8).

Table 7
How many years have you worked as a licensed pharmacist?

Mean	Median	Minimum	Maximum	Mode	SD
12	10	1	40	5	(9.1)

Table 8
Years as a licensed pharmacist

< 1 year		1-5 years		6-10 years		11 - 20 years		More than 20 years	
N	%	N	%	N	%	N	%	N	%
0	0%	49	30.4%	41	25.5%	47	29.2%	24	14.9%

Table 9 and Table 10 show the results for years working in cardiology pharmacy. Respondents had an average of 9 years, with .6% of respondents having 1-5 years of experience, 45% having 6-10 years of experience, 21% having 11-20 years of experience, and about 8% having more than 20 years of experience in the specialty.

Table 9
How many years (since licensure) have you worked in Cardiology pharmacy?

Mean	Median	Minimum	Maximum	Mode	SD
9	6	0	36	3	(7.4)

Table 10
Years in the Cardiology specialty since licensure?

< 1 year		1-5 years		6-10 years		11 - 20 years		More than 20 years	
N	%	N	%	N	%	N	%	N	%
1	.6%	73	45.3%	41	25.5%	33	20.5%	13	8.1%

Table 11 shows the setting in which respondents provided the majority of their patient care. The settings that were most represented in this survey were community hospital, healthcare system (about 32%), university-affiliated health care system (24%), and school of pharmacy faculty (about 17%). No other setting was represented by more than 10% of survey respondents.

Table 11
In what setting does the majority of your practice take place?

	N	%
Community Pharmacy	0	.0%
Community Hospital, Healthcare System	51	31.7%
Federal Hospital/Institution	16	9.9%
Home Health Care	0	.0%
Hospital Based Clinic	8	5.0%
Managed Health Care	8	5.0%
Pharmaceutical Industry	2	1.2%
Private Practice/ Physician Office	4	2.5%
School of Pharmacy Faculty	27	16.8%
University-Affiliated Health Care System	38	23.6%
Other	7	4.3%
Total	161	100.0%

Table 12 shows what percentage of respondents' practice took place in *Inpatient* versus *Ambulatory* settings. On average, respondents reported spending 74% of their work in an *Inpatient* setting and 26% in an *Ambulatory* setting.

Table 12
What percentage of your cardiology pharmacy practice takes place in each of the following settings?

	M	SD
Inpatient	74%	(38.0)
Ambulatory	26%	(38.0)
Total	100%	

Table 13 illustrates that on average, about 56% of respondents' patients were in the 65+ age range, 43% were in the 18 – 64 age range, and only 1% were under 18 years of age.

Table 13
What percentage of your patients falls into each of the following age ranges?

	Mean	SD
Under 18	1%	(3.0)
18 - 64	43%	(16.0)
65+	56%	(16.1)

Table 14 shows the highest pharmacy-related degree earned. About 91% of respondents earned a Pharm. D. degree.

Table 14
What is the highest pharmacy-related degree you have earned?

	N	%
Bachelor's degree	7	4.4%
Master's degree	3	1.9%
Pharm.D.	145	91.2%
Ph.D.	3	1.9%
Other	1	.6%
Total	159	100.0%

As seen in Table 15 about 17% of respondents indicated they did not complete a residency. About 68% indicated they completed a PGY1 residency, 26% completed a PGY2 Cardiology Residency, and 22% completed a PGY2 Residency (not in cardiology).

Table 15
Which of the following have you completed? (Select all that apply.)

	N	%
PGY1 Residency	101	67.8%
PGY2 Cardiology Residency	38	25.5%
PGY2 Residency (Not in Cardiology)	33	22.1%
Cardiology Research Fellowship	11	7.4%
Fellowship (Not in Cardiology) <i>Specify.</i>	7	4.7%
No Residency	25	16.8%
Other	6	3.7%

*Multiple responses permitted – percentages may not total 100%

As seen in Table 16, most respondents (75%) hold the BPS Pharmacotherapy certification, and about 20% hold the BPS added qualification in cardiology.

Table 16
What BPS specialty certifications do you hold? (Select all that apply.)

	N	%
Ambulatory Care Pharmacy	6	3.8%
Nuclear Pharmacy	0	.0%
Nutrition Support Pharmacy	1	.6%
Oncology	1	.6%
Psychiatric Pharmacy	1	.6%
Pharmacotherapy	119	74.8%
Added Qualification in Cardiology	32	20.1%
Added Qualification in Infectious Diseases	1	.6%
None	34	21.4%

*Multiple responses permitted – percentages may not total 100%

The majority of respondents (79%) did not hold any other cardiology-related certifications. See Table 17.

Table 17
What other cardiology-related certifications do you hold?

	N	%
Certified Anticoagulation Pharmacologist (CACP)	13	10.3%
Certified Lipid Specialist (CLS)	7	5.6%
Certified Diabetes Educator (CDE)	7	5.6%
None	99	78.6%
Other	11	8.7%

*Multiple responses permitted – percentages may not total 100%

Ratings for Domains

This section presents the results of the ratings made for percentage of work time spent performing tasks in each domain and the importance of each domain.

Two sets of subgroup analyses were performed to explore how consistent the ratings were for respondents (1) spending differing percentages of time performing cardiology pharmacy-related activities and (2) with different levels of experience in the specialty. Subgroup analyses for domain ratings appear in Appendix 8. Differences in mean percentage of time ratings of 5% or more are illustrated through the use of **bolding**.

Percentage of Cardiology Work Time per Domain

The mean percentages of time participants spent in each domain are presented in Table 18. Respondents spent the most time in *Patient Management and Therapeutics* (57%) and the least time in *Public Health and Advocacy* (5%). The standard deviations around each mean indicate that there was some individual variation in the time spent by respondents in each of the four domains.

Table 18
Considering the time you spend in cardiology pharmacy-related activities, what percentage of that work time do you spend performing the tasks related to each domain?

	N	Mean	SD
Domain 1: Patient Management and Therapeutics Tasks related to the comprehensive management of a patient with or at risk for cardiovascular disease including collecting, interpreting, and integrating pertinent data; and designing, implementing, monitoring, and modifying patient-specific plans of care in collaboration with the multidisciplinary healthcare team.	161	57%	(20.0)
Domain 2: Information Management and Education Tasks related to generation, interpretation, and dissemination of knowledge relative to cardiology and the education of practicing pharmacists and pharmacy trainees, other healthcare professionals, and other stakeholders.	161	23%	(14.4)
Domain 3: Practice Development and Administration Tasks related to establishing, implementing, and monitoring systems and policies to optimize the care of patients with or at risk for cardiovascular disease, while advancing the practice of cardiology pharmacy.	161	15%	(14.1)
Domain 4: Public Health and Advocacy Tasks related to providing preventive health services, public health information, and advocacy for the prevention and treatment of cardiovascular disease.	161	5%	(6.5)

Table 19 presents the percentage of respondents spending 0%, 1 -25%, 26-50%, 51-75% and more than 75% of their work time in each domain. From this presentation of the results, we can see that Domain 1 is the only domain wherein more than 6% of respondents reported spending over 50% of their work time.

Table 19
Percentage of work time per domain

	0%		1-25%		26-50%		51-75%		76-100%	
	N	%	N	%	N	%	N	%	N	%
Domain 1: Patient Management and Therapeutics	2	1.2%	13	8.1%	54	33.5%	71	44.1%	21	13.0%
Domain 2: Information Management and Education	1	.6%	116	72.0%	35	21.7%	7	4.3%	2	1.2%
Domain 3: Practice Development and Administration	8	5.0%	137	85.1%	12	7.5%	3	1.9%	1	.6%
Domain 4: Public Health and Advocacy	43	26.9%	116	72.5%	0	.0%	1	.6%	0	.0%

Domain Importance Ratings

The results are displayed in two ways. First, the percentage of respondents selecting *Not important*, *Minimally important*, *Moderately important*, or *Highly important* for each domain are displayed. Second, under the Total column, mean values were generated by assigning numerical values to each for response option as follows: 1 = Not important, 2 = Minimally important, 3 = Moderately important, and 4 = Highly important.

Table 20
Overall, how important are the tasks included in this domain to the practice of cardiology pharmacy?

	Not	Min	Mod	High	Total		
	%	%	%	%	N	M	SD
Domain 1: Patient Management and Therapeutics	.0%	.0%	3.7%	96.3%	161	4.0	(.2)
Domain 2: Information Management and Education	.0%	1.2%	28.0%	70.8%	161	3.7	(.5)
Domain 3: Practice Development and Administration	.6%	11.8%	44.1%	43.5%	161	3.3	(.7)
Domain 4: Public Health and Advocacy	3.1%	39.1%	41.0%	16.8%	161	2.7	(.8)

Overall, the mean domain importance ratings were very high. A total of 96% of respondents selected highly important for Domain 1, and the mean rating for this domain was 4.0 on a 4-point scale. The second highest importance rating was 3.7 for Domain 2, with about 71% of respondents selecting highly important. The lowest rating was for Domain 4 (2.7 indicating moderately important). There were no differences in the mean importance ratings for domains that were greater than half a scale point (0.5).

Ratings for Tasks

This section presents the results related to the frequency of performance and importance ratings made for the task statements.

Subgroup analyses were also performed at the task level to explore how consistent the ratings were for respondents spending differing percentages of time performing cardiology pharmacy-related activities and for respondents with different levels of experience in the specialty. Subgroup analyses for task ratings appear in Appendix 9. Differences of greater than 0.5 are highlighted through the use of **bolding**.

Task Frequency Ratings

The percentage of respondents selecting each response option with respect to frequency of task performance is shown in Table 21, along with the mean, standard deviation, and number of respondents. The means were calculated after assigning numerical values to each response option as follows: 1=Never, 2=Less than monthly, 3=About monthly, 4=About weekly, 5=About daily.

Of the 9 task statements in Domain 1, 8 received mean frequency ratings 3.5 or above and 1 received a mean frequency rating between 3.0 and 3.5. For the 5 tasks included in Domain 2, 2 received a mean frequency rating 3.5 or above, 1 received a mean frequency rating between 3.0 and 3.5, and the other 2 had mean ratings below 3.0. Of the 6 statements included in Domain 3, 2 received a mean frequency rating between 3.0 and 3.5, and 4 received a mean frequency rating below 3.0. Finally, all 3 statements in Domain 4 received mean frequency ratings below 3.0.

The tasks performed least frequently (mean rating below 2.5) were:

- 2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts). (Mean rating = 2.1)

- 4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, screening). (Mean rating = 2.1)

- 4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers. (Mean rating = 2.2)

- 4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease. (Mean rating = 1.9)

Table 21
Task Frequency Ratings

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
Domain 1: Patient Management and Therapeutics								
1.1 Collect and organize both patient-specific and condition-specific data (e.g., patient history, comorbidities, pertinent physical findings, laboratory data, diagnostic testing) necessary to design a pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease.	1.9%	4.4%	3.1%	10.1%	80.5%	159	4.6	.9
1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions.	25.2%	18.9%	6.9%	21.4%	27.7%	159	3.1	1.6
1.3 Interpret, analyze, and integrate all collected information, including patient-specific and data generated from cardiovascular diagnostic tests (e.g., ECG, echocardiogram), to assess and prioritize current or potential medical or medication-related problems.	1.9%	4.5%	3.2%	17.2%	73.2%	157	4.6	.9
1.4 Collaborate as a member of a multidisciplinary team to establish and prioritize patient-specific therapeutic goals and plans for the patient with or at risk for cardiovascular disease.	2.5%	1.3%	3.1%	15.1%	78.0%	159	4.6	.8
1.5 Design/modify, recommend, and implement an individualized pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease, based on patient- and condition-specific data and best available evidence.	1.9%	4.4%	2.5%	16.5%	74.7%	158	4.6	.9

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
1.6 Design/modify, recommend, and implement a monitoring plan for a patient with or at risk for cardiovascular disease, to assess response to pharmacotherapeutic regimens, progress toward therapeutic goals and potential adverse outcomes.	2.5%	5.0%	4.4%	18.9%	69.2%	159	4.5	1.0
1.7 Provide individualized education and counseling to patients and caregiver(s) regarding the cardiovascular pharmacotherapeutic plan, and assess comprehension.	2.5%	5.7%	11.3%	34.0%	46.5%	159	4.2	1.0
1.8 Facilitate access to care and treatment for the patient with or at risk for cardiovascular disease.	10.1%	13.3%	20.3%	28.5%	27.8%	158	3.5	1.3
1.9 Document direct patient care activities.	3.8%	5.0%	6.3%	16.4%	68.6%	159	4.4	1.1
Domain 2: Information Management and Education								
2.1 Evaluate and critique cardiovascular biomedical literature with regard to study design and methodology, statistical analysis, significance of reported data and conclusions, and applicability of study results to patients with or at risk for cardiovascular disease.	1.3%	9.5%	19.0%	48.1%	22.2%	158	3.8	.9
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	15.8%	65.8%	10.8%	4.4%	3.2%	158	2.1	.8
2.3 Develop, modify, and evaluate cardiovascular disease and medication education and training materials for specific learner groups.	7.0%	36.7%	33.5%	17.1%	5.7%	158	2.8	1.0
2.4 Provide tailored cardiovascular disease and medication education and training to practicing pharmacists and pharmacy trainees (students, residents, and fellows).	.6%	13.3%	24.7%	27.2%	34.2%	158	3.8	1.1

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
2.5 Provide education and cardiovascular medication expertise to health professionals and other pertinent stakeholders.	.6%	25.9%	27.8%	22.2%	23.4%	158	3.4	1.1
Domain 3: Practice Development and Administration								
3.1 Assist the health system in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration).	11.3%	30.2%	26.4%	10.7%	21.4%	159	3.0	1.3
3.2 Perform or participate in quality improvement activities aimed at enhancing the safety and effectiveness of medication-use processes for patients with or at risk for cardiovascular disease.	3.2%	22.2%	40.5%	18.4%	15.8%	158	3.2	1.1
3.3 Develop, review, modify and implement policies, procedures, clinical pathways and protocols used in the care of patients with or at risk for cardiovascular disease.	3.8%	37.3%	39.9%	9.5%	9.5%	158	2.8	1.0
3.4 Participate in the development and maintenance of the health systems formulary for medications used in the care of patients with or at risk of cardiovascular disease.	12.6%	39.6%	33.3%	5.0%	9.4%	159	2.6	1.1
3.5 Participate in the establishment and modification of systems (i.e., technology and processes) to ensure the optimal use of cardiovascular medications.	11.4%	41.8%	32.3%	6.3%	8.2%	158	2.6	1.0
3.6 Justify and document clinical and financial value of cardiology pharmacy services as a means to continue current and advance future practice.	17.0%	37.1%	13.2%	14.5%	18.2%	159	2.8	1.4

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
Domain 4: Public Health and Advocacy								
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, screening).	26.4%	48.4%	17.6%	4.4%	3.1%	159	2.1	.9
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	27.7%	48.4%	11.3%	5.0%	7.5%	159	2.2	1.1
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	35.0%	45.9%	12.1%	3.8%	3.2%	157	1.9	1.0

How frequently did you perform the task during the past 12 months? 1=Never, 2=Quarterly or less, 3=Monthly, 4=Weekly, 5=Daily

Task Importance Ratings

The percentage of respondents selecting each response option with respect to task importance is shown in Table 22 along with the mean, standard deviation, and number of respondents. The means were calculated after assigning numerical values to each response option as follows: 1 = Not important, 2 = Minimally important, 3 = Moderately important, and 4 = Highly important.

Ten tasks received mean importance ratings of 3.5 or above, 11 received mean importance ratings between 3.0 and 3.5, and 2 received mean importance ratings below 3.0. These latter two tasks were:

- 1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions. (Mean rating = 2.9)
- 4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease. (Mean rating = 2.9)

Table 22
Task Importance Ratings

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
Domain 1: Patient Management and Therapeutics							
1.1 Collect and organize both patient-specific and condition-specific data (e.g., patient history, comorbidities, pertinent physical findings, laboratory data, diagnostic testing) necessary to design a pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease.	.0%	1.3%	8.1%	90.6%	160	3.9	.3
1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions.	5.6%	28.7%	32.5%	33.1%	160	2.9	.9
1.3 Interpret, analyze, and integrate all collected information, including patient-specific and data generated from cardiovascular diagnostic tests (e.g., ECG, echocardiogram), to assess and prioritize current or potential medical or medication-related problems.	.0%	1.3%	19.4%	79.4%	160	3.8	.4
1.4 Collaborate as a member of a multidisciplinary team to establish and prioritize patient-specific therapeutic goals and plans for the patient with or at risk for cardiovascular disease.	.0%	.6%	11.3%	88.1%	160	3.9	.4

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
1.5 Design/modify, recommend, and implement an individualized pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease, based on patient- and condition-specific data and best available evidence.	.0%	.6%	8.8%	90.6%	160	3.9	.3
1.6 Design/modify, recommend, and implement a monitoring plan for a patient with or at risk for cardiovascular disease, to assess response to pharmacotherapeutic regimens, progress toward therapeutic goals and potential adverse outcomes.	.6%	.0%	15.6%	83.8%	160	3.8	.4
1.7 Provide individualized education and counseling to patients and caregiver(s) regarding the cardiovascular pharmacotherapeutic plan, and assess comprehension.	.0%	1.9%	21.3%	76.9%	160	3.8	.5
1.8 Facilitate access to care and treatment for the patient with or at risk for cardiovascular disease.	1.9%	16.3%	42.5%	39.4%	160	3.2	.8
1.9 Document direct patient care activities.	.6%	4.4%	25.6%	69.4%	160	3.6	.6
Domain 2: Information Management and Education							
2.1 Evaluate and critique cardiovascular biomedical literature with regard to study design and methodology, statistical analysis, significance of reported data and conclusions, and applicability of study results to patients with or at risk for cardiovascular disease.	.0%	2.5%	23.3%	74.2%	159	3.7	.5
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	1.9%	19.0%	49.4%	29.7%	158	3.1	.7
2.3 Develop, modify, and evaluate cardiovascular disease and medication education and training materials for specific learner groups.	1.3%	9.4%	49.7%	39.6%	159	3.3	.7
2.4 Provide tailored cardiovascular disease and medication education and training to practicing pharmacists and pharmacy trainees (students, residents, and fellows).	.0%	2.5%	32.3%	65.2%	158	3.6	.5
2.5 Provide education and cardiovascular medication expertise to health professionals and other pertinent stakeholders.	.0%	3.1%	34.6%	62.3%	159	3.6	.6

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
Domain 3: Practice Development and Administration							
3.1 Assist the health system in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration).	1.3%	16.4%	46.5%	35.8%	159	3.2	.7
3.2 Perform or participate in quality improvement activities aimed at enhancing the safety and effectiveness of medication-use processes for patients with or at risk for cardiovascular disease.	.6%	9.4%	44.4%	45.6%	160	3.3	.7
3.3 Develop, review, modify and implement policies, procedures, clinical pathways and protocols used in the care of patients with or at risk for cardiovascular disease.	.0%	8.8%	38.8%	52.5%	160	3.4	.7
3.4 Participate in the development and maintenance of the health systems formulary for medications used in the care of patients with or at risk of cardiovascular disease.	.6%	15.8%	38.0%	45.6%	158	3.3	.7
3.5 Participate in the establishment and modification of systems (i.e., technology and processes) to ensure the optimal use of cardiovascular medications.	5.6%	21.3%	40.0%	33.1%	160	3.0	.9
3.6 Justify and document clinical and financial value of cardiology pharmacy services as a means to continue current and advance future practice.	3.1%	16.9%	34.4%	45.6%	160	3.2	.8
Domain 4: Public Health and Advocacy							
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, screening).	2.6%	21.2%	53.8%	22.4%	156	3.0	.7
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	.0%	27.2%	34.8%	38.0%	158	3.1	.8
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	3.2%	30.4%	40.5%	25.9%	158	2.9	.8

How important is the task to the practice of cardiology pharmacy?

1=Not important, 2=Minimally important, 3=Moderately important, or 4=Highly important

Missing Tasks

After rating all of the tasks, participants were asked to indicate any additional tasks they perform as a cardiology pharmacy specialist that may have been omitted from the survey. There were 42 write-in responses to this question. Prior to a task force meeting to review the survey results, these verbatim suggested additions were sent to members of the task force for review. Task force members were asked to determine whether any suggestions represented concepts truly missing from the task list. Write-in responses were deemed by the task force to be either more general or more specific instances of statements already contained in the delineation, content not suitable for testing, or outside the scope of specialty practice. Thus, the delineation of tasks was validated as comprehensive.

Task Validation Decisions

The task force met virtually to review the validation evidence collected in the role delineation survey. Task force members were asked to consider if the ratings for the tasks were sufficiently high to suggest that they be included in the final, validated description of cardiology specialty practice. During the meeting, the task force reviewed all results of the survey, and discussed in detail those task statements that did not receive clear validation evidence. These were defined as instances where 30% or more of the respondents reported never performing the task, and/or the mean frequency rating fell below a 2.5. Using these criteria, there was sufficient validation evidence to support inclusion of 19 of the 23 task statements in the description of cardiology specialty practice. The remaining 4 tasks were discussed in greater detail. These tasks were Task 2.2, Task 4.1, Task 4.2, and Task 4.3. The validation discussion regarding these 4 tasks was informed by the frequency ratings, the importance ratings, considerations regarding the nature of the tasks, and the subgroup ratings. Table 23 documents the validation decisions for these 4 tasks and the rationales for the decisions.

Table 23
Task Validation Decisions and Rationales

Task	Validation Decision (Retain or Remove)	Rationale for Validation Decision, if Retained
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	Retain	Retained based on moderate mean importance rating of 3.1 and the nature of the task – by its nature, this task would typically be performed quarterly or less, and therefore have a lower mean frequency rating.
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, treatment , screening).	Retain	Retained based on moderate mean importance rating of 3.0 and the nature of the task – by its nature, this task would typically be performed quarterly or less, and therefore have a lower mean frequency rating.
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	Retain	Retained based on moderate mean importance rating of 3.1 and the nature of the task – by its nature, this task would typically be performed quarterly or less, and therefore have a low mean frequency rating.
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	Remove	Content covered by other tasks within this domain with the addition of treatment to example list in 4.2 (shown in red above)

Ratings for Knowledge

This section presents the results of the ratings for the knowledge bases. Participants rated the knowledge bases on frequency of use and importance of the knowledge to cardiology pharmacy practice.

Knowledge Frequency Ratings

The percentage of respondents selecting each response option with respect to frequency of use for knowledge is shown in Table 24, along with the mean, standard deviation, and number of respondents. The means were calculated after assigning numerical values to each response option as follows: 1=Never, 2=Less than monthly, 3=About monthly, 4=About weekly, 5=About daily.

Of the 38 knowledge bases in Domain 1, 29 received mean frequency ratings of 3.5 or above, 3 received mean frequency ratings between 3.0 and 3.5, and 6 received mean frequency ratings below 3.0. For the 10 knowledge bases included in Domain 2, 7 received mean frequency ratings of 3.5 or above, 2 received mean frequency ratings between 3.0 and 3.5, and 1 had a mean rating below 3.0. Of the 9 knowledge bases included in Domain 3, 3 received mean frequency ratings of 3.5 or above, 4 received mean frequency ratings between 3.0 and 3.5, and 2 received mean frequency ratings below 3.0. Finally, in Domain 4, 2 knowledge bases received mean frequency ratings between 3.0 and 3.5, and 5 received ratings below 3.0.

The five knowledge bases used least frequently were:

- k2.6 Audience-specific medical writing (Mean rating = 2.4)
- k3.7 Metrics for evaluating the value of cardiology pharmacy services (e.g., clinical, economic and patient experience) (Mean rating = 2.7)
- k4.2 Public health information resources regarding cardiovascular health, prevention, and treatment (Mean rating = 2.7)
- k4.3 Cardiovascular screening techniques and application of results (Mean rating = 2.4)
- k4.7 Health literacy considerations in cardiovascular public health initiatives (Mean rating = 2.1)

Table 24
Knowledge Frequency Ratings

How frequently did you use the knowledge during the past 12 months?
1=Never, 2=Less than monthly, 3=About monthly, 4=About weekly, 5=About daily

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
Domain 1: Patient Management and Therapeutics								
Knowledge of:								
k1.1 Cardiovascular anatomy/physiology	.0%	2.8%	3.5%	17.5%	76.2%	143	4.7	.7
k1.2 Epidemiology, pathophysiology, risk factors, diagnosis, and treatment of the following disease states:								
k1.2.1 Aortic dissection	10.8%	36.9%	33.1%	11.5%	7.6%	157	2.7	1.1
k1.2.2 Arrhythmias	.0%	2.5%	2.5%	22.3%	72.6%	157	4.6	.7
k1.2.3 Cardiac arrest	2.6%	15.5%	14.8%	34.2%	32.9%	155	3.8	1.1
k1.2.4 Cardiac Tamponade	9.6%	39.5%	32.5%	12.1%	6.4%	157	2.7	1.0
k1.2.5 Cardiac transplantation	24.8%	39.5%	9.6%	12.7%	13.4%	157	2.5	1.3
k1.2.6 Dyslipidemia	.6%	1.3%	5.7%	21.7%	70.7%	157	4.6	.7
k1.2.7 Heart failure	.0%	.6%	3.2%	9.6%	86.6%	157	4.8	.5
k1.2.8 Hypertension	.0%	1.3%	3.8%	7.0%	87.9%	157	4.8	.6
k1.2.9 Hypotension	.0%	5.1%	5.8%	19.2%	69.9%	156	4.5	.8
k1.2.10 Infective endocarditis	7.1%	33.3%	30.1%	21.2%	8.3%	156	2.9	1.1
k1.2.11 Ischemic heart disease	.6%	2.6%	8.4%	14.8%	73.5%	155	4.6	.8
k1.2.12 Pericarditis	4.5%	35.3%	37.8%	16.0%	6.4%	156	2.8	1.0
k1.2.13 Peripheral arterial disease	1.3%	21.8%	25.0%	30.1%	21.8%	156	3.5	1.1

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
k1.2.14 Pulmonary hypertension	5.2%	18.8%	27.9%	32.5%	15.6%	154	3.3	1.1
k1.2.15 Thrombotic disorders	.0%	1.9%	7.0%	22.3%	68.8%	157	4.6	.7
k1.2.16 Valvular heart disease	.6%	9.0%	13.5%	33.3%	43.6%	156	4.1	1.0
k1.3 Pharmacology, pharmacokinetics, pharmacodynamics, and pharmacogenomics of cardiovascular pharmacotherapies	.0%	1.3%	2.5%	13.4%	82.8%	157	4.8	.6
k1.4 Lifestyle modifications (e.g., smoking cessation, exercise, diet)	3.2%	5.7%	11.4%	27.2%	52.5%	158	4.2	1.1
k1.5 Cardiovascular procedures (e.g., cardioversion, ablation, PCI, cardiovascular surgery)	.0%	5.7%	6.3%	25.3%	62.7%	158	4.4	.8
k1.6 Device therapy (e.g., pacemaker, IABP, ICDs, LVADs)	1.3%	10.8%	12.7%	31.8%	43.3%	157	4.1	1.1
k1.7 Laboratory testing specific to cardiology (e.g., troponin, BNP, platelet testing, genomic testing, INR)	.0%	.6%	6.3%	10.1%	82.9%	158	4.8	.6
k1.8 Diagnostic testing specific to cardiology (e.g., echo, stress testing, cardiac catheterization, ECG)	.0%	4.4%	4.4%	20.3%	70.9%	158	4.6	.8
k1.9 Drug induced or exacerbation of cardiovascular diseases	.6%	7.6%	15.2%	36.1%	40.5%	158	4.1	1.0
k1.10 Risk stratification scores	.6%	10.3%	17.9%	34.0%	37.2%	156	4.0	1.0
k1.11 Hemodynamic monitoring	2.6%	9.6%	10.3%	21.2%	56.4%	156	4.2	1.1
k1.12 Cardiovascular-specific physical assessments (e.g., weight changes, presence of edema, breath sounds)	3.8%	5.7%	8.3%	24.2%	58.0%	157	4.3	1.1
k1.13 Monitoring parameters for therapeutic efficacy and adverse effects of cardiovascular pharmacotherapies	.0%	1.3%	1.9%	15.9%	80.9%	157	4.8	.5
k1.14 Documentation procedures	2.5%	6.4%	8.9%	17.2%	65.0%	157	4.4	1.1
k1.15 Patient counseling and education techniques	.0%	5.7%	10.2%	32.5%	51.6%	157	4.3	.9

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
k1.16 Collaboration strategies and techniques	.6%	6.4%	11.5%	22.3%	59.2%	157	4.3	1.0
k1.17 Communication strategies and techniques	.6%	5.6%	5.0%	18.1%	70.6%	160	4.5	.9
k1.18 Drug interactions with cardiovascular pharmacotherapies	.0%	.6%	2.5%	14.4%	82.5%	160	4.8	.5
k1.19 Complementary and alternative medicines and their effects on cardiovascular health	1.9%	22.0%	34.0%	28.3%	13.8%	159	3.3	1.0
k1.20 Patient-specific considerations (e.g., age, gender, ethnicity, comorbidities, socioeconomic status)	.0%	4.4%	8.9%	15.8%	70.9%	158	4.5	.8
k1.21 Pharmacoeconomic considerations	1.3%	4.4%	13.2%	34.0%	47.2%	159	4.2	.9
k1.22 Patient assistance programs	10.1%	24.5%	23.9%	28.9%	12.6%	159	3.1	1.2
k1.23 Specialty pharmacy considerations	18.2%	27.7%	25.8%	17.0%	11.3%	159	2.8	1.3
Domain 2: Information Management and Education								
Knowledge of:								
k2.1 Primary, secondary, and tertiary sources of cardiovascular-related information	.0%	2.5%	6.9%	30.8%	59.7%	159	4.5	.7
k2.2 Research design and methodology of cardiovascular-related trials	1.9%	13.2%	22.6%	39.0%	23.3%	159	3.7	1.0
k2.3 Biostatistical methods used in cardiovascular-related trials	1.9%	20.1%	27.0%	35.2%	15.7%	159	3.4	1.0
k2.4 Internal and external validity of cardiovascular-related trials	2.5%	17.0%	22.6%	37.7%	20.1%	159	3.6	1.1
k2.5 Cardiovascular study endpoints (e.g., composite, surrogate)	1.3%	11.9%	25.2%	38.4%	23.3%	159	3.7	1.0
k2.6 Opportunities for disseminating cardiovascular knowledge (e.g., publications, presentations)	5.0%	28.9%	31.4%	26.4%	8.2%	159	3.0	1.0

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
k2.7 Audience-specific medical writing	18.2%	39.6%	28.3%	9.4%	4.4%	159	2.4	1.0
k2.8 Roles of multidisciplinary cardiovascular team members	1.9%	12.1%	19.7%	22.9%	43.3%	157	3.9	1.1
k2.9 Principles and methods of educating, training and mentoring practicing pharmacists and pharmacy trainees	1.9%	13.8%	18.2%	27.0%	39.0%	159	3.9	1.1
k2.10 Principles and methods of educating and communicating with healthcare professionals and other stakeholders	5.1%	15.8%	22.2%	24.7%	32.3%	158	3.6	1.2
Domain 3: Practice Development and Administration								
Knowledge of:								
k3.1 Accreditation, legal, regulatory and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration)	6.9%	32.1%	18.2%	20.8%	22.0%	159	3.2	1.3
k3.2 Methods for identifying areas for process improvement (e.g., incident reports, chart review)	3.9%	24.5%	29.0%	28.4%	14.2%	155	3.2	1.1
k3.3 Quality improvement techniques/methods (e.g., MUE, root cause analysis)	8.3%	40.8%	32.5%	10.8%	7.6%	157	2.7	1.0
k3.4 Metrics for evaluating the value of cardiology pharmacy services (e.g., clinical, economic and patient experience)	15.3%	38.2%	21.7%	11.5%	13.4%	157	2.7	1.2
k3.5 Pharmacoeconomics of cardiovascular therapies	10.9%	26.3%	23.7%	19.9%	19.2%	156	3.1	1.3
k3.6 Clinical practice guidelines for the treatment of patients with or at risk for cardiovascular disease (e.g., AHA/ACCF, HFSA, ACCP, NHLBI)	.0%	2.5%	8.2%	11.4%	77.8%	158	4.6	.7

	Never	Less than monthly	About monthly	About weekly	About daily	Total		
	%	%	%	%	%	N	Mean	SD
k3.7 Principles of formulary development and management, including strategies for managing drug shortages	2.5%	15.9%	23.6%	31.8%	26.1%	157	3.6	1.1
k3.8 Capabilities and limitations of electronic health information systems	7.6%	12.7%	13.4%	21.7%	44.6%	157	3.8	1.3
k3.9 Methods for developing, implementing, and evaluating clinical pathways, protocols, and policies	4.5%	27.4%	30.6%	17.8%	19.7%	157	3.2	1.2
Domain 4: Public Health and Advocacy								
Knowledge of:								
k4.1 Cardiovascular health promotion, disease prevention, and risk reduction strategies	7.7%	23.7%	21.2%	25.0%	22.4%	156	3.3	1.3
k4.2 Public health information resources regarding cardiovascular health, prevention, and treatment	13.5%	34.2%	29.0%	14.8%	8.4%	155	2.7	1.1
k4.3 Cardiovascular screening techniques and application of results	13.4%	30.6%	26.1%	19.1%	10.8%	157	2.8	1.2
k4.4 Healthcare delivery systems (e.g., Medicare, Medicaid, private insurance) as they impact access to care and treatment for cardiovascular patients	15.3%	31.8%	21.7%	12.1%	19.1%	157	2.9	1.3
k4.5 Pharmacy advocacy organizations (e.g., ASHP, ACCP, APhA)	5.7%	33.1%	28.7%	24.2%	8.3%	157	3.0	1.1
k4.6 Professional organizations and their roles and resources related to patient advocacy (e.g., ACC, AHA, HFSA)	7.7%	38.5%	25.0%	23.1%	5.8%	156	2.8	1.1
k4.7 Health literacy considerations in cardiovascular public health initiatives	18.6%	42.3%	13.5%	17.9%	7.7%	156	2.5	1.2

Knowledge Importance Ratings

The percentage of respondents selecting each response option with respect to knowledge importance is shown in Table 25 along with the mean, standard deviation, and number of respondents. Again, the means were calculated after assigning numerical values to each response option as follows: 1 = Not important, 2 = Minimally important, 3 = Moderately important, 4 = Highly important.

There were a total of nine knowledge bases that received a mean importance rating below 3.0 (moderately important). These were:

- k1.22 Patient assistance programs (Mean rating = 2.8)
- k1.23 Specialty pharmacy considerations (Mean rating = 2.6)
- k2.7 Audience-specific medical writing (Mean rating = 2.8)
- k4.2 Public health information resources regarding cardiovascular health, prevention, and treatment (Mean rating = 2.9)
- k4.3 Cardiovascular screening techniques and application of results (Mean rating = 2.9)
- k4.4 Healthcare delivery systems (e.g., Medicare, Medicaid, private insurance) as they impact access to care and treatment for cardiovascular patients. (Mean rating = 2.9)
- k4.5 Pharmacy advocacy organizations (e.g., ASHP, ACCP, APhA) (Mean rating = 2.8)
- k4.6 Professional organizations and their roles and resources related to patient advocacy (e.g., ACC, AHA, HFSA) (Mean rating = 2.9)
- k4.7 Health literacy considerations in cardiovascular public health initiatives (Mean rating = 2.8)

Of the other 55 knowledge bases, 25 received mean importance ratings between 3.0 and 3.5, and 30 received mean importance ratings above 3.5 on the 4-point scale.

Table 25
Knowledge Importance Ratings

How important is the knowledge to the practice of cardiology pharmacy?
1=Not important, 2=Minimally important, 3=Moderately important, or 4=Highly important

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
Domain 1: Patient Management and Therapeutics							
Knowledge of:							
k1.1 Cardiovascular anatomy/physiology	.0%	2.1%	14.6%	83.3%	144	3.8	.4
k1.2 Epidemiology, pathophysiology, risk factors, diagnosis, and treatment of the following disease states:							
k1.2.1 Aortic dissection	2.5%	27.4%	38.2%	31.8%	157	3.0	.8
k1.2.2 Arrhythmias	.0%	.6%	10.3%	89.1%	156	3.9	.3
k1.2.3 Cardiac arrest	.0%	4.5%	16.9%	78.6%	154	3.7	.5
k1.2.4 Cardiac Tamponade	2.6%	31.0%	36.1%	30.3%	155	2.9	.8
k1.2.5 Cardiac transplantation	2.6%	20.6%	36.8%	40.0%	155	3.1	.8
k1.2.6 Dyslipidemia	.0%	1.3%	8.9%	89.8%	157	3.9	.4
k1.2.7 Heart failure	.0%	.0%	3.2%	96.8%	156	4.0	.2
k1.2.8 Hypertension	.0%	.0%	5.2%	94.8%	155	3.9	.2
k1.2.9 Hypotension	.0%	1.3%	18.6%	80.1%	156	3.8	.4
k1.2.10 Infective endocarditis	1.9%	14.8%	37.4%	45.8%	155	3.3	.8
k1.2.11 Ischemic heart disease	.0%	1.9%	10.3%	87.8%	156	3.9	.4
k1.2.12 Pericarditis	1.9%	28.2%	36.5%	33.3%	156	3.0	.8
k1.2.13 Peripheral arterial disease	.0%	17.4%	35.5%	47.1%	155	3.3	.7
k1.2.14 Pulmonary hypertension	.0%	13.5%	38.1%	48.4%	155	3.3	.7
k1.2.15 Thrombotic disorders	.0%	1.3%	10.9%	87.8%	156	3.9	.4

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
k1.2.16 Valvular heart disease	.0%	9.6%	32.5%	58.0%	157	3.5	.7
k1.3 Pharmacology, pharmacokinetics, pharmacodynamics, and pharmacogenomics of cardiovascular pharmacotherapies	.0%	.0%	8.8%	91.2%	159	3.9	.3
k1.4 Lifestyle modifications (e.g., smoking cessation, exercise, diet)	.6%	7.5%	25.2%	66.7%	159	3.6	.7
k1.5 Cardiovascular procedures (e.g., cardioversion, ablation, PCI, cardiovascular surgery)	.0%	4.5%	33.1%	62.4%	157	3.6	.6
k1.6 Device therapy (e.g., pacemaker, IABP, ICDs, LVADs)	.0%	10.2%	37.6%	52.2%	157	3.4	.7
k1.7 Laboratory testing specific to cardiology (e.g., troponin, BNP, platelet testing, genomic testing, INR)	.0%	.0%	12.0%	88.0%	158	3.9	.3
k1.8 Diagnostic testing specific to cardiology (e.g., echo, stress testing, cardiac catheterization, ECG)	.0%	.6%	24.7%	74.7%	158	3.7	.5
k1.9 Drug induced or exacerbation of cardiovascular diseases	.0%	3.2%	23.4%	73.4%	158	3.7	.5
k1.10 Risk stratification scores	.0%	6.4%	38.9%	54.8%	157	3.5	.6
k1.11 Hemodynamic monitoring	.0%	4.5%	23.1%	72.4%	156	3.7	.6
k1.12 Cardiovascular-specific physical assessments (e.g., weight changes, presence of edema, breath sounds)	.0%	6.4%	29.3%	64.3%	157	3.6	.6
k1.13 Monitoring parameters for therapeutic efficacy and adverse effects of cardiovascular pharmacotherapies	.0%	.6%	11.5%	87.9%	157	3.9	.4
k1.14 Documentation procedures	1.9%	15.3%	27.4%	55.4%	157	3.4	.8
k1.15 Patient counseling and education techniques	.0%	5.8%	24.4%	69.9%	156	3.6	.6
k1.16 Collaboration strategies and techniques	.6%	9.6%	31.2%	58.6%	157	3.5	.7
k1.17 Communication strategies and techniques	.6%	9.4%	25.0%	65.0%	160	3.5	.7

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
k1.18 Drug interactions with cardiovascular pharmacotherapies	.0%	.0%	11.3%	88.7%	159	3.9	.3
k1.19 Complementary and alternative medicines and their effects on cardiovascular health	2.5%	20.8%	44.7%	32.1%	159	3.1	.8
k1.20 Patient-specific considerations (e.g., age, gender, ethnicity, comorbidities, socioeconomic status)	.6%	3.8%	28.7%	66.9%	160	3.6	.6
k1.21 Pharmacoeconomic considerations	.6%	11.3%	34.0%	54.1%	159	3.4	.7
k1.22 Patient assistance programs	5.1%	30.4%	39.9%	24.7%	158	2.8	.9
k1.23 Specialty pharmacy considerations	6.3%	44.4%	30.0%	19.4%	160	2.6	.9
Domain 2: Information Management and Education							
Knowledge of:							
k2.1 Primary, secondary, and tertiary sources of cardiovascular-related information	.0%	3.8%	22.0%	74.2%	159	3.7	.5
k2.2 Research design and methodology of cardiovascular-related trials	.6%	6.9%	34.0%	58.5%	159	3.5	.7
k2.3 Biostatistical methods used in cardiovascular-related trials	.0%	13.8%	37.1%	49.1%	159	3.4	.7
k2.4 Internal and external validity of cardiovascular-related trials	.6%	11.4%	33.5%	54.4%	158	3.4	.7
k2.5 Cardiovascular study endpoints (e.g., composite, surrogate)	.0%	7.5%	31.4%	61.0%	159	3.5	.6
k2.6 Opportunities for disseminating cardiovascular knowledge (e.g., publications, presentations)	.0%	15.8%	53.8%	30.4%	158	3.1	.7
k2.7 Audience-specific medical writing	3.8%	34.0%	40.9%	21.4%	159	2.8	.8
k2.8 Roles of multidisciplinary cardiovascular team members	2.5%	11.5%	32.5%	53.5%	157	3.4	.8

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
k2.9 Principles and methods of educating, training and mentoring practicing pharmacists and pharmacy trainees	1.3%	9.4%	33.8%	55.6%	160	3.4	.7
k2.10 Principles and methods of educating and communicating with healthcare professionals and other stakeholders	1.9%	10.7%	36.5%	50.9%	159	3.4	.7
Domain 3: Practice Development and Administration							
Knowledge of:							
k3.1 Accreditation, legal, regulatory and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration)	3.2%	16.6%	40.8%	39.5%	157	3.2	.8
k3.2 Methods for identifying areas for process improvement (e.g., incident reports, chart review)	2.5%	19.7%	43.9%	33.8%	157	3.1	.8
k3.3 Quality improvement techniques/methods (e.g., MUE, root cause analysis)	3.8%	22.3%	45.9%	28.0%	157	3.0	.8
k3.4 Metrics for evaluating the value of cardiology pharmacy services (e.g., clinical, economic and patient experience)	4.4%	20.3%	38.6%	36.7%	158	3.1	.9
k3.5 Pharmacoeconomics of cardiovascular therapies	1.9%	19.9%	46.8%	31.4%	156	3.1	.8
k3.6 Clinical practice guidelines for the treatment of patients with or at risk for cardiovascular disease (e.g., AHA/ACCF, HFSA, ACCP, NHLBI)	.0%	2.5%	9.6%	87.9%	157	3.9	.4
k3.7 Principles of formulary development and management, including strategies for managing drug shortages	2.5%	17.2%	33.8%	46.5%	157	3.2	.8

	Not	Minimally	Moderately	Highly	Total		
	%	%	%	%	N	Mean	SD
k3.8 Capabilities and limitations of electronic health information systems	7.6%	21.7%	35.7%	35.0%	157	3.0	.9
k3.9 Methods for developing, implementing, and evaluating clinical pathways, protocols, and policies	1.9%	17.8%	36.9%	43.3%	157	3.2	.8
Domain 4: Public Health and Advocacy							
Knowledge of:							
k4.1 Cardiovascular health promotion, disease prevention, and risk reduction strategies	.6%	24.4%	39.1%	35.9%	156	3.1	.8
k4.2 Public health information resources regarding cardiovascular health, prevention, and treatment	3.2%	29.7%	45.8%	21.3%	155	2.9	.8
k4.3 Cardiovascular screening techniques and application of results	2.6%	24.0%	50.0%	23.4%	154	2.9	.8
k4.4 Healthcare delivery systems (e.g., Medicare, Medicaid, private insurance) as they impact access to care and treatment for cardiovascular patients	5.8%	28.8%	39.1%	26.3%	156	2.9	.9
k4.5 Pharmacy advocacy organizations (e.g., ASHP, ACCP, APhA)	5.8%	28.8%	44.2%	21.2%	156	2.8	.8
k4.6 Professional organizations and their roles and resources related to patient advocacy (e.g., ACC, AHA, HFSA)	4.5%	27.6%	42.9%	25.0%	156	2.9	.8
k4.7 Health literacy considerations in cardiovascular public health initiatives	5.1%	31.4%	40.4%	23.1%	156	2.8	.8

Missing Knowledge

After participants rated the knowledge bases, they were asked to indicate any additional knowledge they use as a cardiology pharmacy specialist that may have been omitted from the survey. There were only 4 write-in responses to this question. These verbatim suggested additions were reviewed by the task force, and the knowledge list was deemed to be comprehensive.

Knowledge Validation Decisions

Task force members were also asked to consider if the ratings for the knowledge bases were sufficiently high to suggest that they be included in the final, validated description of cardiology specialty practice. There was only one knowledge base that did not receive clear validation evidence; that is, 30% or more of the respondents reported *never* using the knowledge and/or the mean frequency rating fell below a 2.5. Therefore, there was sufficient validation evidence to support inclusion of 63 of the 64 knowledge bases in the description of cardiology specialty practice.

The knowledge base in question was k2.7 *Knowledge of audience-specific medical writing*. This knowledge was retained based on the retention of Task 2.2 for which this knowledge is needed, and the fact that the mean importance rating was slightly less than moderately important (2.8).

For the final version of the validated description of cardiology pharmacy practice, see Appendix 10.

Development of Examination Specifications

Development of Domain Weights

ProExam calculated hypothetical specifications for a potential new certification examination in cardiology pharmacy.

While there are many variations in methodology, there are two main methods of developing examination specifications from validation survey ratings. The first is the “top-down” approach. In this approach, weights representing percentages of an examination devoted to each domain are calculated using respondents’ domain-level *Percentage of Work Time* and *Importance* ratings. The second approach is the “bottom-up” approach. This approach involves calculating weights using the respondents’ task *Frequency* and *Importance* ratings, and summing those weights within each domain. In the “top-down” approach, the weights are based on the ratings for domains. In the “bottom-up” approach, the weights are based on the ratings for tasks.

ProExam used the “top-down” method to develop the weights for the domains. This approach is preferred over the “bottom-up” approach when domains contain different numbers of tasks (Spray & Huang, 2000), as is the case in the current delineation.

ProExam calculated the domain weights as follows:

First, domain sums (D) were derived using the formula:

$$D_i = \sum_{k=1}^n (P_k * I_k)$$

where

i = a single domain

k = a single respondent

n = the number of respondents

P = a respondent’s *Percentage of time* rating for a domain

I = a respondent’s *Importance* rating for a domain

Domain weights (DWs) were calculated by dividing each domain sum by the sum of all domain sums ($\sum D$):

$$DW_i = D_i / \sum_{i=1}^4 D$$

Hypothetical examination specifications are presented for the total sample, and for those respondents spending less (< 50%) or more (\geq 50%) time performing cardiology pharmacy-related activities (Table 26).

Table 26
Hypothetical Examination Specifications

	Total Sample	< 50% specialty work time	≥ 50% specialty work time
Domain 1: Patient Management and Therapeutics	59%	48%	60%
Domain 2: Information Management and Education	23%	26%	23%
Domain 3: Practice Development and Administration	14%	18%	13%
Domain 4: Public Health and Advocacy	4%	9%	3%

Recommended Examination Specifications

After examining the hypothetical, empirically-derived examination specifications, the task force deemed the percentages derived from the total survey respondent group to be the best representation of specialty practice. Thus, the recommended examination specifications for a potential new specialty certification found in Table 27 reflect the empirically derived examination specifications for the total sample.

Table 27
Final Recommendations for Examination Specifications

	% of Exam
Domain 1: Patient Management and Therapeutics	59%
Domain 2: Information Management and Education	23%
Domain 3: Practice Development and Administration	14%
Domain 4: Public Health and Advocacy	4%
Total	100%

Summary and Recommendations

The conduct of the role delineation study of cardiology pharmacy specialists yielded a structured description of specialty practice in terms of major domains and tasks, as well as the specialized knowledge base that supports task performance.

The results of this study provide the validity foundation for future credentialing initiatives. Should BPS decide to develop a new specialty certification in cardiology pharmacy, ProExam recommends that:

- examination items be developed to assess the specialty knowledge and tasks contained in Appendix 10,
- items be classified in terms of domain, task, and specialty knowledge base assessed by the item, and
- examinations be constructed to match the percentage weight examination specifications recommended by the task force.

By following this guidance, BPS will create a chain of validity evidence that that ties examination content to the role delineation study. By so doing, BPS will meet best practice recommendations and accreditation requirements for credentialing programs.

References

- ISO/IEC 17024 International Organization for Standards (IOS) and International Electrotechnical Commission (IEC) (2003). *Conformity assessment - General requirements for bodies operating certification of persons*. Geneva: ISO.
- National Organization for Competency Assurance (2002). National Commission for Certifying Agencies Standards for the Accreditation of Certification Programs. Washington, DC: NOCA.
- Spray, J.A. & Huang, C. (2000). Obtaining test blueprint weights from job analysis surveys. *Journal of Educational Measurement*, 37, 187-201.

Appendix 1
SME Nomination Form

Self-nominations are welcome.

All nominations must be received by May 4, 2012.

***1. Name of Nominator**

***2. Nominator's e-mail**

***3. Name of Nominee**

***4. Nominee's Job Title**

***5. Nominee's Employer**

***6. Employer's Address**

***7. Employer's City, State, Zip**

***8. Nominee's Work Phone**

***9. Nominee's e-mail address**

***10. Select the box next to each activity in which the nominee is willing to participate. In addition to supplying the information below, please send a copy of the nominee's resume or CV to info@bpsweb.org, and include the phrase *Cardiology Pharmacy* in the subject line.**

(Please note that nomination does not guarantee participation. Participants in each activity will be selected to achieve the best balance of professional background and experience.)

Task Force Member: (July 2012 to March 2013)

Serve on committee that creates domains, tasks, and knowledge statements comprising the cardiology pharmacy delineation of practice. **Attend a face-to-face meeting in Washington, DC on July 23 - 24, 2012.** Participate in a pre-meeting data collection activity and a post-meeting homework assignment. Participate in virtual meetings from August 2012 to March 2013 to refine and finalize the delineation of cardiology specialty practice.

Independent Review: (August/September 2012)

Participate in a 1-hour email review of the domains, tasks, and knowledge statements comprising the cardiology pharmacy delineation of practice.

Survey Pilot Test: (November 2012)

Participate in a 1-hour critical review of an e-survey of cardiology pharmacy practice.

***11. In what setting does the MAJORITY of the nominee's practice take place?**

- Academic Institution
- Ambulatory Care
- Cancer Center
- Chain Community Pharmacy
- Community Hospital, For Profit
- Community Hospital, Not-For-Profit
- Drug Information Center
- Federal Hospital/Institution
- Home Health Care
- Independent Community Pharmacy
- Long-Term Care
- Managed Health Care
- Pharmaceutical Industry
- Physician's Office
- University Affiliated Hospital
- Other (Please specify.)

***12. On average, what percentage of time does the nominee spend in providing cardiology pharmacy services to patients?**

*** 13. What was the nominee's ENTRY LEVEL pharmacy-related degree?**

- Bachelor's degree
- Pharm.D.
- Other
- Other (Please specify.)

*** 14. What is the HIGHEST pharmacy-related degree the nominee has earned?**

- Bachelor's degree
- Master's degree
- Pharm.D.
- Ph.D.
- Other (Please specify.)

*** 15. How many years has the nominee worked as a licensed pharmacist?**

*** 16. How many years has the nominee worked in cardiology pharmacy?**

***17. During the past 12 months, with which patient population did the nominee spend the MOST amount of time?**

- Pediatric
- Adolescent (13- 20)
- Adult (21- 65)
- Adult (65+)
- Both adult age groups (21-65+)
- All of the above

***18. What BPS specialty certifications, including added qualifications, does the nominee hold? (Select all that apply)**

- Ambulatory Care Pharmacy
- Nuclear Pharmacy
- Nutrition Support Pharmacy
- Oncology
- Psychiatric Pharmacy
- Pharmacotherapy
- Pharmacotherapy with added qualifications in cardiology
- Pharmacotherapy with added qualifications in infectious diseases
- None

Next >>

Appendix 2
Pre-meeting Data Collection Activity Screen Captures

Cardiology Pharmacy Pre-meeting Data Collection

To make our work more efficient at our in-person meeting, we are asking you each to contribute your initial thoughts regarding the format and content of the Cardiology Pharmacy role delineation document. Please provide your answers to these questions no later than **July 1, 2012**, so that we may review and compile the results into a summary report in advance of our July 23-24 meeting.

Please use the Resource Manual provided on pages 3 - 8 of the Task Force pre-meeting memo to help you effectively respond to the questions below.

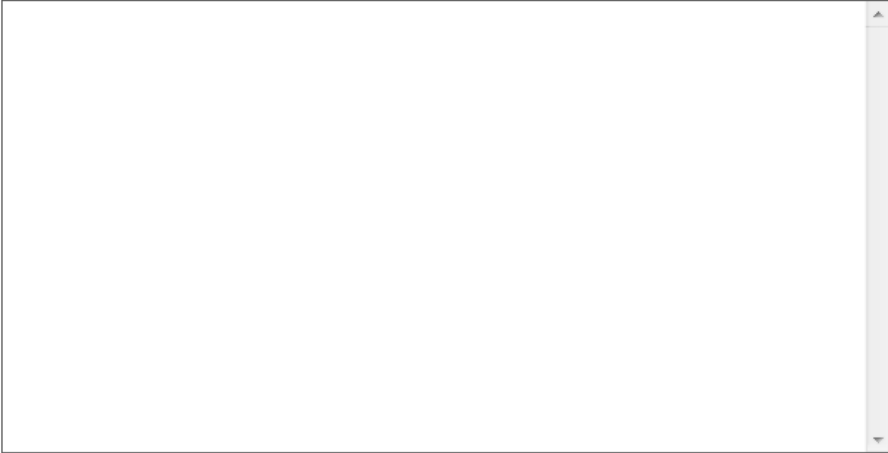
Name:

Domains are the major areas that make up practice in a profession. Domains are mutually exclusive and encompass all work activities performed across all work settings in which practitioners may be located.

What major categories of practice might serve as a possible domain structure describing the role of the cardiology pharmacist? See page 5 of the pre-meeting mailing for examples of domain structures for other BPS specialty certification areas.

Tasks are discrete work elements within each domain, and represent actions taken or activities performed in the domain of practice. Tasks describe distinct, observable, and specific practice-related activities.

What specific tasks are performed by a pharmacist specializing in cardiology pharmacy that are NOT performed by a non-specialist? For more information on delineating task statements, see pages 6 - 7 of the pre-meeting mailing.



Knowledge is factual or procedural information which, when applied, makes successful performance of a task possible (i.e., what a practitioner needs to know).

What specialty-specific, beyond licensure knowledge must a pharmacist specializing in cardiology pharmacy have in order to be effective? Be as specific as possible. See pages 7 - 8 of the pre-meeting mailing for additional information on delineating knowledge areas.

Please provide any additional information here that you feel would be important for BPS to consider regarding the potential new specialty of cardiology pharmacy.

Submit your responses

Appendix 3
Cardiology Pharmacy Task Force
Meeting #1 Attendees

BOARD OF PHARMACY SPECIALTIES

**Cardiology Pharmacy Role Delineation Study
Task Force Meeting 1**

**July 23 – 24, 2012
Alexandria, VA**

ATTENDEES

Task Force Members

Sara Brouse
Paul P. Dobesh
Mike Dorsch
John Lindsley
Joel Marrs
Carrie Oliphant
Robert Lee Page
David Roffman
Anne Schullo-Feulner
Freddy Tadros

Board of Pharmacy Specialties

William Ellis, Executive Director
Brian Lawson, Director of Professional Affairs
Jacquelyn Kelly Marshall, Associate Director for Certification

Professional Examination Service

Patricia Muenzen, Director of Research Programs
Jacqueline Siano, Research Director

Appendix 4
Instructions for Independent Review

Cardiology Pharmacy

Thank you again for taking the time to participate in this important independent review of the description of the specialty practice of Cardiology Pharmacy. This review is an important step in the role delineation study (RDS) process. The purpose of an RDS is to analyze the knowledge and unique tasks that comprise a proposed specialty. The results of this role delineation study may be incorporated into the official petition to BPS to recognize Cardiology Pharmacy as a specialty.

RDS Task Force meetings have been conducted to develop an initial description of the proposed pharmacy specialty area. The description consists of domains of practice and specific tasks performed by Cardiology pharmacists, as well as the specialized knowledge base required to perform the tasks. We are now circulating the work product to subject matter experts (SMEs), like yourself, for further review.

A draft role delineation document is attached for your review. Please review this document for completeness and clarity, and make your suggestions (additions, deletions, new wording, etc.) directly in the document. The tracking feature has been enabled.

The tasks and knowledge in the role delineation are organized into four domains: Patient Management and Therapeutics, Information Management and Education, Practice Development and Administration, Public Health and Advocacy. Please think about the following when you review the outline:

- Have all required tasks and knowledge bases *specific to specialty practice* been included?
- Are there redundancies?
- Is each statement delineated as accurately and concisely as possible? Have examples been provided if necessary?

Once we have collected your comments, the RDS Task Force will meet via a series of virtual meetings to finalize the delineation based on your feedback. Subsequently, a survey will be developed and sent to a large sample of Cardiology pharmacists who will be asked to rate the tasks and the knowledge for validation purposes.

Please e-mail your edited copies (with track changes shown) to jsiano@proexam.org by **Monday October 15, 2012**.

Thank you very much.

Appendix 5
Survey Screen Captures

Save and exit

Responses for all previous pages will be saved.

What percentage of your overall work time do you spend providing pharmacy services for pediatric patients?

 %

Of this time, what percent is spent providing *direct* patient care?

 %

Next

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Need help? Send an email to BPSPediatric@proexam.org

Progress Meter 6%

Save and exit

Responses for all previous pages will be saved.

Structure of Survey

In this survey, you will be rating tasks performed by Pediatric Pharmacy Specialists and the specialized knowledge needed in order to perform these tasks.

Tasks and knowledge are grouped together within four broad domains of practice:

- Domain 1: Patient Management
- Domain 2: Practice Management
- Domain 3: Information Management and Education
- Domain 4: Public Health and Patient Advocacy

The survey is organized into the following four sections:

1. Task Ratings - In this section, you will rate tasks performed by Pediatric Pharmacy Specialists on two rating scales.
2. Domain Ratings - In this section, you will rate each of the four domains.
3. Knowledge Ratings- In this section, you will rate knowledge used by Pediatric Pharmacy Specialists on two rating scales.
4. Demographic Questionnaire - In this section, you will answer questions about your professional background.

Next

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Progress Meter 8%

Section 1 — Tasks

For each task, please make the following two ratings:

Frequency How frequently did you perform the task during the past 12 months?
Never, Quarterly or less, Monthly, Weekly, Daily

Importance How important is the task to providing effective care to pediatric patients?
Not important, Minimally important, Moderately important, or Highly important

When you rate **Frequency**, think about how frequently **you personally** performed the task in the past 12 months. When you rate **Importance**, think about the contribution of the task to providing effective care to pediatric patients, whether or not you personally performed the task.

	How frequently did you perform the task in the past 12 months?					How important is the task to providing effective care to pediatric patients?			
	Never	Quarterly or less	Monthly	Weekly	Daily	Not	Min	Mod	Very
Domain 1: Patient Management									
For the Pediatric Patient:									
Obtain pertinent patient information (e.g., weight, height and/or body surface area, age, allergies, disease states, medication history including herbal and dietary supplements, current medications, dose form preference, immunization status, nutritional status, and social/family history) via medical record, discussion with healthcare colleagues and/or patient/parent/caregiver interview.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain relevant clinical and laboratory data and results of diagnostic procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perform pertinent physical assessments to evaluate patient condition and guide patient medication management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perform point of care testing (e.g., blood glucose, international normalized ratio [INR]).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Save and exit

Responses for all *previous* pages will be saved.

If any tasks you perform as a pediatric pharmacy specialist were not included in this survey, please describe them here.

[Click here to view the task list.](#)

Next

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 34%
Progress Meter

Section 2 — Domain Ratings

Please make the following overall ratings for each of the four domains of specialty practice:

% of Time Of the time you spent in pediatric pharmacy during the past year, what percentage did you spend performing the tasks in each domain?
Overall percentages must total 100%.

Importance How important is the domain for providing effective care to pediatric patients?
Not important, Minimally important, Moderately important, or Highly important

[Click here to view the tasks included in each domain.](#)

	% of Time	Importance			
		Not	Min	Mod	High
Domain 1: Patient Management – Tasks related to the comprehensive management of a pediatric patient including collecting, interpreting, and integrating pertinent clinical data; and designing, implementing, monitoring, and modifying patient-specific plans of care for pediatric patients in collaboration with the healthcare team.	<input type="text"/> %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Domain 2: Practice Management – Tasks related to advancing pediatric pharmacy practice; and recommending, designing, implementing, and monitoring systems and policies to optimize the care of pediatric patients.	<input type="text"/> %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Domain 3: Information Management and Education – Tasks related to retrieval, generation, interpretation, and dissemination of knowledge related to pediatric pharmacy, and the education of healthcare providers, trainees, patients and caregivers.	<input type="text"/> %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Domain 4: Public Health and Patient Advocacy – Tasks related to providing preventive health services, public health information, and advocacy for the pediatric patient population.	<input type="text"/> %	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sum	<input type="text"/> %				

Section 3 — Knowledge Ratings

For each knowledge area, please make the following two ratings:

Frequency How frequently did you use the knowledge during the past 12 months?
Never, Quarterly or less, Monthly, Weekly, Daily

Importance How important is the knowledge to providing effective care to pediatric patients?
Not important, Minimally important, Moderately important, or Highly important

When you rate **Frequency**, think about how frequently *you personally* used the knowledge in the past 12 months. When you rate **Importance**, think about the contribution of the knowledge area to providing effective care to pediatric patients, in general.

	How frequently did you use the knowledge during the past 12 months?					How important is the knowledge to providing effective care to pediatric patients?			
	Never	Quarterly or less	Monthly	Weekly	Daily	Not	Min	Mod	High
Domain 1: Patient Management									
Knowledge of:									
Normal growth and development of the pediatric population	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Age-appropriate interviewing techniques for patients, parents, and caregivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal considerations for dependent and emancipated patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Essential components of a medical history including maternal and birth history and childhood immunization status, if appropriate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Essential components of a social history, including day care attendance, siblings, smoke exposure, home environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	How frequently did you use the knowledge					How important is the knowledge to providing effective care			

Save and exit

Responses for all *previous* pages will be saved.

If any knowledge you use as a pediatric pharmacy specialist was not included in this survey, please describe it here.

[Click here to view the knowledge list.](#)

Next

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 79%
Progress Meter

Section 4 — Demographic Questionnaire

How many years have you worked as a licensed pharmacist?

Years

How many years (since licensure) have you worked with pediatric patients?

Years

In what setting does the *majority* of your practice take place? (Select one best answer.)

- Adult hospital with pediatric wing/services
- Adult hospital with children's hospital within it
- Pediatric hospital freestanding
- Pediatric ambulatory care clinic - freestanding
- Home care
- Other (Please specify.)

Which of the following most closely describes your primary role? (Select one best answer.)

- Director of pharmacy
- Clinical manager
- Operational manager
- Clinical specialist
- Generalist pharmacist/decentralized pharmacist
- Staff pharmacist
- Academia
- Researcher
- Medication safety officer
- Other (Please specify.)

What percentage of your patients falls into each of the following age ranges?
(Estimate the percentage of your patients in each age range. Your percentages should total 100%.)

Which of the following most closely describes your primary role? (Select one best answer.)

- Director of pharmacy
- Clinical manager
- Operational manager
- Clinical specialist
- Generalist pharmacist/decentralized pharmacist
- Staff pharmacist
- Academia
- Researcher
- Medication safety officer
- Other (Please specify.)

What percentage of your patients falls into each of the following age ranges?
(Estimate the percentage of your patients in each age range. Your percentages should total 100%.)

Age Range	% of Your Patients
Pre-term neonates (Neonate born at <38 weeks gestational age)	<input type="text"/>
Full-term neonates (Neonate born at 38-42 weeks [average 40 weeks] gestational age)	<input type="text"/>
Infants (1 month [>28 days] to 1 year of age)	<input type="text"/>
Children (1-12 years of age)	<input type="text"/>
Adolescents (13-18 years of age)	<input type="text"/>
Adults (>18 years of age)	<input type="text"/>
Sum	<input type="text" value="0"/>

What is the highest pharmacy-related degree you have earned?

- Bachelor's degree
- Master's degree
- Pharm.D.
- Ph.D.
- Other (Please specify.)

Which of the following have you completed? (Select all that apply.)

- PGY1 Residency
- PGY2 Pediatric Residency
- PGY2 Residency (not in pediatrics)

Done

Internet

90%

What is the highest pharmacy-related degree you have earned?

- Bachelor's degree
- Master's degree
- Pharm.D.
- Ph.D.
- Other (Please specify.)

Which of the following have you completed? (Select all that apply.)

- PGY1 Residency
- PGY2 Pediatric Residency
- PGY2 Residency (not in pediatrics)
- Pediatric Research Fellowship
- No residency
- Other (Please specify.)

What BPS specialty certifications or added qualifications do you hold? (Select all that apply.)

- Ambulatory Care Pharmacy
- Nuclear Pharmacy
- Nutrition Support Pharmacy
- Oncology
- Psychiatric Pharmacy
- Pharmacotherapy
- Added Qualification in Cardiology
- Added Qualification in Infectious Diseases
- None

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Progress Meter 97%

Done

Internet

90%

Save and exit

Responses for all *previous* pages will be saved.

To show our appreciation for your time and effort, your name will be entered into a random drawing for one of four \$50 Amazon.com gift cards.

Enter your information below to be entered in the drawing.

Enter in the Boxes Below	
Full Name	<input type="text"/>
Email Address	<input type="text"/>

*The information provided here will not be used for any other purpose other than this drawing.

Next

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100%
Progress Meter

Appendix 6
Pilot Test Invitation

Dear <<First>>:

The role delineation for the proposed new specialty of Cardiology Pharmacy has been developed and reviewed by several subject-matter experts currently practicing in the Cardiology Pharmacy specialty. The role delineation, including specialized tasks and knowledge bases, has been translated into a web-based Survey of Cardiology Pharmacy Practice.

We now need you to participate in a pilot test of this online survey in advance of the survey's administration to a large sample of pharmacists practicing in this specialty.

You will be asked to respond to the following questions throughout the survey:

1. Did you experience any difficulties using the ratings scales?
2. Are the questions in the demographic and background questionnaire clear and accurate?
3. Were the directions for taking the survey clear?
4. Did you experience any technical difficulties?
5. How many minutes did it take you to complete the survey?
6. Please provide additional suggestions or comments to improve the survey experience.

To access the survey, copy and paste the entire link below into your browser:

<<URL>>

If you are unable to complete the entire survey in one sitting, you may exit and return later using the above URL.

We ask you to complete the pilot test of the survey no later than January 18, 2013.

If you experience any difficulties while pilot testing the survey, please contact me at BPSCardiology@proexam.org.

Thank you in advance for taking the time to perform this critical review.

Jacqueline Siano
Research Director
Professional Examination Service
475 Riverside Drive
New York, NY 10115

Appendix 7
Survey Invitation and Reminders

Dear <<First>>:

The Board of Pharmacy Specialties (BPS) is currently conducting a study to analyze the knowledge and unique tasks that comprise the proposed new specialty of Cardiology Pharmacy. The results of this study will be incorporated into the official petition to BPS to recognize Cardiology Pharmacy as a specialty.

If you are currently practicing in the specialty of cardiology pharmacy, we are asking you to complete an online role delineation survey. We anticipate the survey taking about 25 minutes to complete. Your responses to the survey questions will be entirely confidential and only aggregated results will be reported.

We understand how valuable your time is. To show our appreciation, after you complete the survey you will be entered into a random drawing for one of four \$50 Amazon.com gift cards.

The link below will take you to the survey:

<<URL>>

If you are unable to complete the entire survey in one sitting, you may exit and return later using the above URL.

Thank you in advance for contributing to the advancement of the Cardiology Pharmacy specialty in this way.

Board of Pharmacy Specialties
Cardiology Pharmacy Task Force

Dear <<First>>,

Last week you received an invitation to contribute to the development of the proposed new pharmacy specialty in Cardiology. The Board of Pharmacy Specialties (BPS) is conducting this study to analyze the knowledge and unique tasks that comprise Cardiology Pharmacy. The results of this study will be incorporated into the official petition to BPS to recognize Cardiology pharmacy as a specialty.

If you are currently practicing in the specialty of Cardiology, we are asking you to complete an online role delineation survey. We anticipate the survey taking about 25 minutes to complete. Your responses to the survey questions will be entirely confidential and only aggregated results will be reported.

We understand how valuable your time is. To show our appreciation, after you complete the survey you will be entered into a random drawing for one of four \$50 Amazon.com gift cards.

The link below will take you to the survey:

<<URL>>

If you are unable to complete the entire survey in one sitting, you may exit and return later using the above URL.

We ask you to please complete the survey no later than February 27, 2013.

Thank you in advance for contributing to the advancement of the Cardiology Pharmacy specialty in this way.

Board of Pharmacy Specialties
Cardiology Pharmacy Task Force

Dear <<First>>,

We still need your valuable feedback regarding the practice of Cardiology Pharmacy. In order to allow for your participation, we have extended the deadline to participate in the survey of Cardiology Pharmacists sponsored by the Board of Pharmacy Specialties (BPS).

The purpose of the survey is to validate the knowledge and unique tasks that comprise Cardiology Pharmacy. The results of this study will be incorporated into the official petition to BPS to recognize Cardiology pharmacy as a specialty.

We anticipate the survey taking about 25 minutes to complete.

We understand how valuable your time is. To show our appreciation, after you complete the survey you will be entered into a random drawing for one of four \$50 Amazon.com gift cards.

The link below will take you to the survey:

<<URL>>

If you are unable to complete the entire survey in one sitting, you may exit and return later using the above URL.

We ask you to please complete the survey by the extended deadline of March 6, 2013.

Thank you in advance for contributing to the advancement of the Cardiology Pharmacy specialty in this way.

Board of Pharmacy Specialties

Cardiology Pharmacy Task Force

Appendix 8
Subgroup Analysis for Domain Ratings

Percentage of Time Ratings for Domains by Subgroups

**Table A
Domain Percentage of Time Ratings by
Percentage of Time Providing Spent in Cardiology Pharmacy-related Activities**

	< 50% Cardiology Time (n=20)		≥ 50% Cardiology Time (n=121)	
	M	SD	M	SD
	Domain 1: Patient Management and Therapeutics	45.0%	27.0	58.2%
Domain 2: Information Management and Education	25.5%	19.3	23.1%	13.6
Domain 3: Practice Development and Administration	19.4%	18.4	14.4%	13.3
Domain 4: Public Health and Advocacy	10.1%	13.0	4.4%	4.6

**Table B
Domain Percentage of Time Ratings by
Years of Experience Working in Cardiology Specialty**

	1-5 yrs (n=73)		6-10 yrs (n=41)		11-20 yrs (n=33)		20+ yrs (n=13)	
	M	SD	M	SD	M	SD	M	SD
	Domain 1: Patient Management and Therapeutics	59.2%	18.8	59.4%	19.2	51.6%	21.4	47.1%
Domain 2: Information Management and Education	20.4%	11.5	20.6%	9.2	29.8%	19.0	31.7%	20.8
Domain 3: Practice Development and Administration	15.5%	14.7	15.9%	14.8	13.8%	13.4	11.4%	9.8
Domain 4: Public Health and Advocacy	4.9%	4.4	4.1%	5.4	4.8%	5.0	9.7%	15.5

Importance Ratings for Domains by Subgroups

**Domain Importance Ratings by
Percentage of Time Providing Cardiology Pharmacy Services**

	< 50% Cardiology Time (n=20)		≥ 50% Cardiology Time (n=121)	
	M	SD	M	SD
	Domain 1: Patient Management and Therapeutics	4.0	.2	4.0
Domain 2: Information Management and Education	3.6	.6	3.7	.5
Domain 3: Practice Development and Administration	3.1	.8	3.3	.7
Domain 4: Public Health and Advocacy	2.9	.9	2.7	.8

**Domain Importance by
Years of Experience Working in Cardiology Specialty**

	1-5 yrs (n=73)		6-10 yrs (n=41)		11-20 yrs (n=33)		20+ yrs (n=13)	
	M	SD	M	SD	M	SD	M	SD
	Domain 1: Patient Management and Therapeutics	4.0	.2	4.0	.2	3.9	.3	4.0
Domain 2: Information Management and Education	3.6	.6	3.8	.4	3.9	.3	3.8	.4
Domain 3: Practice Development and Administration	3.3	.7	3.4	.6	3.2	.8	3.2	.4
Domain 4: Public Health and Advocacy	2.7	.7	2.6	.9	2.6	.7	3.0	.7

Appendix 9
Subgroup Analysis for Task Ratings

**Task Frequency Ratings by
Percentage of Time Providing Pharmacy Services for Cardiology Patients**

	< 50% Cardiology Time (n=20)	≥ 50% Cardiology Time (n=121)
	Mean	Mean
Domain 1: Patient Management and Therapeutics		
1.1 Collect and organize both patient-specific and condition-specific data (e.g., patient history, comorbidities, pertinent physical findings, laboratory data, diagnostic testing) necessary to design a pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease.	3.9	4.7
1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions.	2.6	3.2
1.3 Interpret, analyze, and integrate all collected information, including patient-specific and data generated from cardiovascular diagnostic tests (e.g., ECG, echocardiogram), to assess and prioritize current or potential medical or medication-related problems.	3.6	4.7
1.4 Collaborate as a member of a multidisciplinary team to establish and prioritize patient-specific therapeutic goals and plans for the patient with or at risk for cardiovascular disease.	3.8	4.8
1.5 Design/modify, recommend, and implement an individualized pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease, based on patient- and condition-specific data and best available evidence.	3.9	4.7
1.6 Design/modify, recommend, and implement a monitoring plan for a patient with or at risk for cardiovascular disease, to assess response to pharmacotherapeutic regimens, progress toward therapeutic goals and potential adverse outcomes.	3.4	4.6
1.7 Provide individualized education and counseling to patients and caregiver(s) regarding the cardiovascular pharmacotherapeutic plan, and assess comprehension.	3.3	4.3
1.8 Facilitate access to care and treatment for the patient with or at risk for cardiovascular disease.	3.0	3.6
1.9 Document direct patient care activities.	4.1	4.5

	< 50% Cardiology Time (n=20)	≥ 50% Cardiology Time (n=121)
	Mean	Mean
Domain 2: Information Management and Education		
2.1 Evaluate and critique cardiovascular biomedical literature with regard to study design and methodology, statistical analysis, significance of reported data and conclusions, and applicability of study results to patients with or at risk for cardiovascular disease.	3.3	3.9
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	2.1	2.1
2.3 Develop, modify, and evaluate cardiovascular disease and medication education and training materials for specific learner groups.	2.6	2.8
2.4 Provide tailored cardiovascular disease and medication education and training to practicing pharmacists and pharmacy trainees (students, residents, and fellows).	3.4	3.9
2.5 Provide education and cardiovascular medication expertise to health professionals and other pertinent stakeholders.	3.3	3.4
Domain 3: Practice Development and Administration		
3.1 Assist the health system in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration).	2.8	3.0
3.2 Perform or participate in quality improvement activities aimed at enhancing the safety and effectiveness of medication-use processes for patients with or at risk for cardiovascular disease.	2.8	3.3
3.3 Develop, review, modify and implement policies, procedures, clinical pathways and protocols used in the care of patients with or at risk for cardiovascular disease.	2.4	2.9
3.4 Participate in the development and maintenance of the health systems formulary for medications used in the care of patients with or at risk of cardiovascular disease.	2.2	2.6
3.5 Participate in the establishment and modification of systems (i.e., technology and processes) to ensure the optimal use of cardiovascular medications.	2.3	2.6

	< 50% Cardiology Time (n=20)	≥ 50% Cardiology Time (n=121)
	Mean	Mean
3.6 Justify and document clinical and financial value of cardiology pharmacy services as a means to continue current and advance future practice.	2.5	2.8
Domain 4: Public Health and Advocacy		
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, screening).	2.2	2.1
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	2.5	2.1
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	2.1	1.9

**Task Frequency Ratings by
Years of Experience Working with Cardiology Patients**

	1-5 yrs (n=73)	6-10 yrs (n=41)	11-20 yrs (n=33)	20+ yrs (n=13)
	Mean	Mean	Mean	Mean
Domain 1: Patient Management and Therapeutics				
1.1 Collect and organize both patient-specific and condition-specific data (e.g., patient history, comorbidities, pertinent physical findings, laboratory data, diagnostic testing) necessary to design a pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease.	4.6	4.9	4.5	4.4
1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions.	2.9	3.1	3.3	3.1
1.3 Interpret, analyze, and integrate all collected information, including patient-specific and data generated from cardiovascular diagnostic tests (e.g., ECG, echocardiogram), to assess and prioritize current or potential medical or medication-related problems.	4.5	4.8	4.5	4.2
1.4 Collaborate as a member of a multidisciplinary team to establish and prioritize patient-specific therapeutic goals and plans for the patient with or at risk for cardiovascular disease.	4.8	4.8	4.4	4.4
1.5 Design/modify, recommend, and implement an individualized pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease, based on patient- and condition-specific data and best available evidence.	4.6	4.8	4.4	4.1
1.6 Design/modify, recommend, and implement a monitoring plan for a patient with or at risk for cardiovascular disease, to assess response to pharmacotherapeutic regimens, progress toward therapeutic goals and potential adverse outcomes.	4.6	4.6	4.4	4.2
1.7 Provide individualized education and counseling to patients and caregiver(s) regarding the cardiovascular pharmacotherapeutic plan, and assess comprehension.	4.3	4.1	4.2	3.8
1.8 Facilitate access to care and treatment for the patient with or at risk for cardiovascular disease.	3.6	3.5	3.6	3.3
1.9 Document direct patient care activities.	4.6	4.4	4.2	3.7

	1-5 yrs (n=73)	6-10 yrs (n=41)	11-20 yrs (n=33)	20+ yrs (n=13)
	Mean	Mean	Mean	Mean
Domain 2: Information Management and Education				
2.1 Evaluate and critique cardiovascular biomedical literature with regard to study design and methodology, statistical analysis, significance of reported data and conclusions, and applicability of study results to patients with or at risk for cardiovascular disease.	3.8	3.7	4.1	3.8
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	2.1	2.1	2.3	1.9
2.3 Develop, modify, and evaluate cardiovascular disease and medication education and training materials for specific learner groups.	2.8	2.8	2.7	2.7
2.4 Provide tailored cardiovascular disease and medication education and training to practicing pharmacists and pharmacy trainees (students, residents, and fellows).	3.8	3.8	4.0	3.8
2.5 Provide education and cardiovascular medication expertise to health professionals and other pertinent stakeholders.	3.3	3.5	3.7	3.2
Domain 3: Practice Development and Administration				
3.1 Assist the health system in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration).	2.9	3.4	3.0	2.6
3.2 Perform or participate in quality improvement activities aimed at enhancing the safety and effectiveness of medication-use processes for patients with or at risk for cardiovascular disease.	3.3	3.3	3.2	3.0
3.3 Develop, review, modify and implement policies, procedures, clinical pathways and protocols used in the care of patients with or at risk for cardiovascular disease.	2.9	2.9	2.8	2.1
3.4 Participate in the development and maintenance of the health systems formulary for medications used in the care of patients with or at risk of cardiovascular disease.	2.6	2.7	2.7	2.0

	1-5 yrs (n=73)	6-10 yrs (n=41)	11-20 yrs (n=33)	20+ yrs (n=13)
	Mean	Mean	Mean	Mean
3.5 Participate in the establishment and modification of systems (i.e., technology and processes) to ensure the optimal use of cardiovascular medications.	2.6	2.7	2.4	2.6
3.6 Justify and document clinical and financial value of cardiology pharmacy services as a means to continue current and advance future practice.	2.8	3.0	2.9	2.0
Domain 4: Public Health and Advocacy				
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, screening).	2.1	2.0	1.9	2.6
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	2.1	2.0	2.4	2.3
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	2.0	1.8	1.8	2.3

**Task Importance Ratings by
Percentage of Time Providing Cardiology Pharmacy Services**

	< 50% Cardiology Time (n=20)	≥ 50% Cardiology Time (n=121)
	Mean	Mean
Domain 1: Patient Management and Therapeutics		
1.1 Collect and organize both patient-specific and condition-specific data (e.g., patient history, comorbidities, pertinent physical findings, laboratory data, diagnostic testing) necessary to design a pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease.	3.9	3.9
1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions.	2.8	3.0
1.3 Interpret, analyze, and integrate all collected information, including patient-specific and data generated from cardiovascular diagnostic tests (e.g., ECG, echocardiogram), to assess and prioritize current or potential medical or medication-related problems.	3.8	3.8
1.4 Collaborate as a member of a multidisciplinary team to establish and prioritize patient-specific therapeutic goals and plans for the patient with or at risk for cardiovascular disease.	3.9	3.9
1.5 Design/modify, recommend, and implement an individualized pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease, based on patient- and condition-specific data and best available evidence.	3.9	3.9
1.6 Design/modify, recommend, and implement a monitoring plan for a patient with or at risk for cardiovascular disease, to assess response to pharmacotherapeutic regimens, progress toward therapeutic goals and potential adverse outcomes.	3.7	3.8
1.7 Provide individualized education and counseling to patients and caregiver(s) regarding the cardiovascular pharmacotherapeutic plan, and assess comprehension.	3.8	3.7
1.8 Facilitate access to care and treatment for the patient with or at risk for cardiovascular disease.	3.1	3.2
1.9 Document direct patient care activities.	3.7	3.6

	< 50% Cardiology Time (n=20)	≥ 50% Cardiology Time (n=121)
	Mean	Mean
Domain 2: Information Management and Education		
2.1 Evaluate and critique cardiovascular biomedical literature with regard to study design and methodology, statistical analysis, significance of reported data and conclusions, and applicability of study results to patients with or at risk for cardiovascular disease.	3.4	3.8
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	2.8	3.1
2.3 Develop, modify, and evaluate cardiovascular disease and medication education and training materials for specific learner groups.	3.2	3.3
2.4 Provide tailored cardiovascular disease and medication education and training to practicing pharmacists and pharmacy trainees (students, residents, and fellows).	3.6	3.6
2.5 Provide education and cardiovascular medication expertise to health professionals and other pertinent stakeholders.	3.6	3.6
Domain 3: Practice Development and Administration		
3.1 Assist the health system in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration).	3.3	3.2
3.2 Perform or participate in quality improvement activities aimed at enhancing the safety and effectiveness of medication-use processes for patients with or at risk for cardiovascular disease.	3.3	3.4
3.3 Develop, review, modify and implement policies, procedures, clinical pathways and protocols used in the care of patients with or at risk for cardiovascular disease.	3.2	3.5
3.4 Participate in the development and maintenance of the health systems formulary for medications used in the care of patients with or at risk of cardiovascular disease.	3.2	3.3

	< 50% Cardiology Time (n=20)	≥ 50% Cardiology Time (n=121)
	Mean	Mean
3.5 Participate in the establishment and modification of systems (i.e., technology and processes) to ensure the optimal use of cardiovascular medications.	3.2	3.0
3.6 Justify and document clinical and financial value of cardiology pharmacy services as a means to continue current and advance future practice.	3.1	3.2
Domain 4: Public Health and Advocacy		
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, screening).	3.0	3.0
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	3.4	3.1
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	3.0	2.9

**Task Importance Ratings by
Years of Experience Working in Cardiology Specialty**

	1-5 yrs (n=73)	6-10 yrs (n=41)	11-20 yrs (n=33)	20+ yrs (n=13)
	Mean	Mean	Mean	Mean
Domain 1: Patient Management and Therapeutics				
1.1 Collect and organize both patient-specific and condition-specific data (e.g., patient history, comorbidities, pertinent physical findings, laboratory data, diagnostic testing) necessary to design a pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease.	3.8	4.0	3.9	4.0
1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions.	2.7	3.0	3.1	3.4
1.3 Interpret, analyze, and integrate all collected information, including patient-specific and data generated from cardiovascular diagnostic tests (e.g., ECG, echocardiogram), to assess and prioritize current or potential medical or medication-related problems.	3.7	3.8	3.8	3.9
1.4 Collaborate as a member of a multidisciplinary team to establish and prioritize patient-specific therapeutic goals and plans for the patient with or at risk for cardiovascular disease.	3.9	3.8	3.9	4.0
1.5 Design/modify, recommend, and implement an individualized pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease, based on patient- and condition-specific data and best available evidence.	3.9	3.9	3.9	4.0
1.6 Design/modify, recommend, and implement a monitoring plan for a patient with or at risk for cardiovascular disease, to assess response to pharmacotherapeutic regimens, progress toward therapeutic goals and potential adverse outcomes.	3.8	3.8	3.8	3.8
1.7 Provide individualized education and counseling to patients and caregiver(s) regarding the cardiovascular pharmacotherapeutic plan, and assess comprehension.	3.7	3.8	3.8	3.8
1.8 Facilitate access to care and treatment for the patient with or at risk for cardiovascular disease.	3.2	3.2	3.2	3.2
1.9 Document direct patient care activities.	3.7	3.7	3.5	3.5

	1-5 yrs (n=73)	6-10 yrs (n=41)	11-20 yrs (n=33)	20+ yrs (n=13)
	Mean	Mean	Mean	Mean
Domain 2: Information Management and Education				
2.1 Evaluate and critique cardiovascular biomedical literature with regard to study design and methodology, statistical analysis, significance of reported data and conclusions, and applicability of study results to patients with or at risk for cardiovascular disease.	3.7	3.7	3.8	3.7
2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).	3.1	3.1	3.0	3.2
2.3 Develop, modify, and evaluate cardiovascular disease and medication education and training materials for specific learner groups.	3.2	3.2	3.3	3.4
2.4 Provide tailored cardiovascular disease and medication education and training to practicing pharmacists and pharmacy trainees (students, residents, and fellows).	3.6	3.6	3.6	3.8
2.5 Provide education and cardiovascular medication expertise to health professionals and other pertinent stakeholders.	3.6	3.6	3.6	3.7
Domain 3: Practice Development and Administration				
3.1 Assist the health system in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration).	3.1	3.3	3.1	3.3
3.2 Perform or participate in quality improvement activities aimed at enhancing the safety and effectiveness of medication-use processes for patients with or at risk for cardiovascular disease.	3.3	3.5	3.1	3.7
3.3 Develop, review, modify and implement policies, procedures, clinical pathways and protocols used in the care of patients with or at risk for cardiovascular disease.	3.4	3.5	3.3	3.4
3.4 Participate in the development and maintenance of the health systems formulary for medications used in the care of patients with or at risk of cardiovascular disease.	3.3	3.4	3.1	3.3

	1-5 yrs (n=73)	6-10 yrs (n=41)	11-20 yrs (n=33)	20+ yrs (n=13)
	Mean	Mean	Mean	Mean
3.5 Participate in the establishment and modification of systems (i.e., technology and processes) to ensure the optimal use of cardiovascular medications.	3.0	3.1	2.8	3.0
3.6 Justify and document clinical and financial value of cardiology pharmacy services as a means to continue current and advance future practice.	3.3	3.2	3.2	2.7
Domain 4: Public Health and Advocacy				
4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, screening).	3.0	2.9	2.9	3.3
4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.	3.0	3.2	3.3	3.0
4.3 Serve as a public advocate regarding the prevention and treatment of cardiovascular disease.	2.9	2.8	2.9	3.0

Appendix 10
Final Cardiology Pharmacy Role Delineation

Domain 1: Patient Management and Therapeutics

Tasks related to the comprehensive management of a patient with or at risk for cardiovascular disease including collecting, interpreting, and integrating pertinent data; and designing, implementing, monitoring, and modifying patient-specific plans of care in collaboration with the multidisciplinary healthcare team.

For the Cardiology Patient:

- 1.1 Collect and organize both patient-specific and condition-specific data (e.g., patient history, comorbidities, pertinent physical findings, laboratory data, diagnostic testing) necessary to design a pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease.
- 1.2 Perform targeted cardiovascular physical assessments (e.g., weight changes, presence of edema, breath sounds) to more fully assess patient conditions.
- 1.3 Interpret, analyze, and integrate all collected information, including patient-specific and data generated from cardiovascular diagnostic tests (e.g., ECG, echocardiogram), to assess and prioritize current or potential medical or medication-related problems.
- 1.4 Collaborate as a member of a multidisciplinary team to establish and prioritize patient-specific therapeutic goals and plans for the patient with or at risk for cardiovascular disease.
- 1.5 Design/modify, recommend, and implement an individualized pharmacotherapeutic plan for a patient with or at risk for cardiovascular disease, based on patient- and condition-specific data and best available evidence.
- 1.6 Design/modify, recommend, and implement a monitoring plan for a patient with or at risk for cardiovascular disease, to assess response to pharmacotherapeutic regimens, progress toward therapeutic goals and potential adverse outcomes.
- 1.7 Provide individualized education and counseling to patients and caregiver(s) regarding the cardiovascular pharmacotherapeutic plan, and assess comprehension.
- 1.8 Facilitate access to care and treatment for the patient with or at risk for cardiovascular disease.
- 1.9 Document direct patient care activities.

Knowledge of:

- k1.1 CV anatomy/physiology
- k1.2 Epidemiology, pathophysiology, risk factors, diagnosis, and treatment of the following disease states:
 - k.1.2.1 Aortic dissection
 - k.1.2.2 Arrhythmias
 - k.1.2.3 Cardiac arrest
 - k.1.2.4 Cardiac Tamponade

- k.1.2.5 Cardiac transplantation
- k.1.2.6 Dyslipidemia
- k.1.2.7 Heart failure
- k.1.2.8 Hypertension
- k.1.2.9 Hypotension
- k.1.2.10 Infective endocarditis
- k.1.2.11 Ischemic heart disease
- k.1.2.12 Pericarditis
- k.1.2.13 Peripheral arterial disease
- k.1.2.14 Pulmonary hypertension
- k.1.2.15 Thrombotic disorders
- k.1.2.16 Valvular heart disease
- k1.3 Pharmacology, pharmacokinetics, pharmacodynamics, and pharmacogenomics of CV pharmacotherapies
- k1.4 Lifestyle modifications (e.g., smoking cessation, exercise, diet)
- k1.5 CV procedures (e.g., cardioversion, ablation, PCI, CV surgery)
- k1.6 Device therapy (e.g., pacemaker, IABP, ICDs, LVADs)
- k1.7 Laboratory testing specific to cardiology (e.g., troponin, BNP, platelet testing, genomic testing, INR)
- k1.8 Diagnostic testing specific to cardiology (e.g., echo, stress testing, cardiac catheterization, ECG)
- k1.9 Drug induced or exacerbation of CV diseases
- k1.10 Risk stratification scores
- k1.11 Hemodynamic monitoring
- k1.12 CV-specific physical assessments (e.g., weight changes, presence of edema, breath sounds)
- k1.13 Monitoring parameters for therapeutic efficacy and adverse effects of CV pharmacotherapies
- k1.14 Documentation procedures
- k1.15 Patient counseling and education techniques
- k1.16 Collaboration strategies and techniques
- k1.17 Communication strategies and techniques
- k1.18 Drug interactions with CV pharmacotherapies
- k1.19 Complementary and alternative medicines and their effects on CV health
- k1.20 Patient-specific considerations (e.g., age, gender, ethnicity, comorbidities, socioeconomic status)

- k1.21 Pharmacoeconomic considerations
- k1.22 Patient assistance programs
- k1.23 Specialty pharmacy considerations

Domain 2: Information Management and Education

Tasks related to generation, interpretation, and dissemination of knowledge relative to cardiology and the education of practicing pharmacists and pharmacy trainees, other healthcare professionals, and other stakeholders.

- 2.1 Evaluate and critique cardiovascular biomedical literature with regard to study design and methodology, statistical analysis, significance of reported data and conclusions, and applicability of study results to patients with or at risk for cardiovascular disease.
- 2.2 Contribute to the cardiovascular body of knowledge (e.g., original research, review articles, case reports, abstracts).
- 2.3 Develop, modify, and evaluate cardiovascular disease and medication education and training materials for specific learner groups.
- 2.4 Provide tailored cardiovascular disease and medication education and training to practicing pharmacists and pharmacy trainees (students, residents, and fellows).
- 2.5 Provide education and cardiovascular medication expertise to health professionals and other pertinent stakeholders.

Knowledge of:

- k2.1 Primary, secondary, and tertiary sources of cardiovascular-related information
- k2.2 Research design and methodology of cardiovascular-related trials
- k2.3 Biostatistical methods used in cardiovascular-related trials
- k2.4 Internal and external validity of cardiovascular-related trials
- k2.5 Cardiovascular study endpoints (e.g., composite, surrogate)
- k2.6 Opportunities for disseminating CV knowledge (e.g., publications, presentations)
- k2.7 Audience-specific medical writing
- k2.8 Roles of multidisciplinary CV team members
- k2.9 Principles and methods of educating, training and mentoring practicing pharmacists and pharmacy trainees
- k2.10 Principles and methods of educating and communicating with healthcare professionals and other stakeholders

Domain 3: Practice Development and Administration

Tasks related to establishing, implementing, and monitoring systems and policies to optimize the care of patients with or at risk for cardiovascular disease, while advancing the practice of cardiology pharmacy.

- 3.1 Assist the health system in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration).
- 3.2 Perform or participate in quality improvement activities aimed at enhancing the safety and effectiveness of medication-use processes for patients with or at risk for cardiovascular disease.
- 3.3 Develop, review, modify and implement policies, procedures, clinical pathways and protocols used in the care of patients with or at risk for cardiovascular disease.
- 3.4 Participate in the development and maintenance of the health system's formulary for medications used in the care of patients with or at risk of cardiovascular disease.
- 3.5 Participate in the establishment and modification of systems (i.e., technology and processes) to ensure the optimal use of cardiovascular medications.
- 3.6 Justify and document clinical and financial value of cardiology pharmacy services as a means to continue current and advance future practice.

Knowledge of:

- k3.1 Accreditation, legal, regulatory and safety requirements related to the care of cardiovascular patients (e.g., The Joint Commission requirements, ASHP standards, Center for Medicare and Medicaid Services, National Committee for Quality Assurance, State Boards of Pharmacy, US Food and Drug Administration)
- k3.2 Methods for identifying areas for process improvement (e.g., incident reports, chart review)
- k3.3 Quality improvement techniques/methods (e.g., MUE, root cause analysis)
- k3.4 Metrics for evaluating the value of cardiology pharmacy services (e.g., clinical, economic and patient experience)
- k3.5 Pharmacoeconomics of cardiovascular therapies
- k3.6 Clinical practice guidelines for the treatment of patients with or at risk for cardiovascular disease (e.g., AHA/ACCF, HFSA, ACCP, NHLBI)
- k3.7 Principles of formulary development and management, including strategies for managing drug shortages
- k3.8 Capabilities and limitations of electronic health information systems
- k3.9 Methods for developing, implementing, and evaluating clinical pathways, protocols, and policies

Domain 4: Public Health and Patient Advocacy

Tasks related to providing preventive health services, public health information, and advocacy for the prevention and treatment of cardiovascular disease.

- 4.1 Provide information and guidance to the public regarding cardiovascular issues (e.g., risk factors, prevention, treatment, screening).
- 4.2 Advocate for the role and contribution of cardiology pharmacists to the public, healthcare providers, health systems, and policy makers.

Knowledge of:

- k4.1 CV health promotion, disease prevention, and risk reduction strategies
- k4.2 Public health information resources regarding CV health, prevention, and treatment
- k4.3 CV screening techniques and application of results
- k4.4 Healthcare delivery systems (e.g., Medicare, Medicaid, private insurance) as they impact access to care and treatment for CV patients
- k4.5 Pharmacy advocacy organizations (e.g., ASHP, ACCP, APhA)
- k4.6 Professional organizations and their roles and resources related to patient advocacy (e.g., ACC, AHA, HFSA)
- k4.7 Health literacy considerations in CV public health initiatives

Appendix F-1

ASHP Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Cardiology

<p align="center">Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Cardiology</p>
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Overview of PGY2 Pharmacy Residencies in Cardiology

The PGY2 pharmacy residency in cardiology is designed to transition PGY1 residency graduates from generalist practice to specialized practice focused on the care of patients with cardiovascular disease and hemodynamic compromise, and on the prevention of cardiovascular disease. Residency graduates are equipped to participate as integral members of interdisciplinary teams caring for individuals with cardiovascular disease, assuming responsibility for the patient's medication-related care. In that role they provide the team with evidence-based medication-related information and formulate that information into expert recommendations to the team for the use of medications and other therapeutic approaches. The wealth of residency graduates' knowledge of cardiovascular disease and treatment, combined with extensive care of individuals with these diseases, produces a pharmacist who can successfully serve health care organizations as an authoritative source on medications used to treat patients with cardiovascular disease and for decision-making affecting their care.

Cardiology pharmacy residency graduates exhibit the characteristics of practice leaders. They are experienced in writing about and presenting on cardiology pharmacy-related topics. They are effective advocates for the needs of patients with cardiovascular disease. They can be expected to continue their pursuit of expertise in practice; to possess advanced skills to identify the pharmacotherapy and medication-use training needs of other health care professionals caring for individuals with cardiovascular disease; and to deliver effective training to those health care professionals and patients.

Explanation of the Contents of This Document:

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

The order in which the required educational outcomes are presented in this document does not suggest relative importance of the outcome, amount of time that should be devoted to teaching the outcome, or sequence for teaching.

¹ Nimmo, CM. Developing training materials and programs: creating educational objectives and assessing their attainment. In: Nimmo CM, Guerrero R, Greene SA, Taylor JT, eds. Staff development for pharmacy practice. Bethesda, MD: ASHP; 2000.

The educational outcomes, goals, and objectives are divided into those that are required and those that are elective. The required outcomes, including all of the goals and objectives falling under them, must be included in the design of all programs. The elective outcomes are provided for those programs that wish to add to the required outcomes. Programs selecting an elective outcome are not required to include all of the goals and objectives falling under that outcome. In addition to the potential elective outcomes contained in this document, programs are free to create their own elective outcomes with associated goals and objectives. Other sources of elective outcomes may include elective educational outcomes in the list provided for PGY1 pharmacy residencies and educational outcomes for training in other PGY2 areas. Each of the goals falling under the program's selection of program outcomes (required and elective) must be evaluated at least once during the resident's year.

Educational Outcomes (Outcome): Educational outcomes are statements of broad categories of the residency graduates' capabilities.

Educational Goals (Goal): Educational goals listed under each educational outcome are broad sweeping statements of abilities.

Educational Objectives (OBJ): Resident achievement of educational goals is determined by assessment of the resident's ability to perform the associated educational objectives below each educational goal.

Instructional Objectives (IO): Instructional objectives are the result of a learning analysis of each of the educational objectives. They are offered as a resource for preceptors encountering difficulty in helping residents achieve a particular educational objective. The instructional objectives falling below the educational objectives suggest knowledge and skills required for successful performance of the educational objective that the resident may not possess upon entering the residency year. Instructional objectives are teaching tools only. They are not required in any way nor are they meant to be evaluated.

Required Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Cardiology

Outcome R1: Serve as an authoritative expert on the optimal use of medications used in the care of patients with cardiovascular disease.

Goal R1.1 Establish oneself as an expert for cardiology pharmacy-related information and resources within an organization.

OBJ R1.1.1 (Synthesis) Develop a strategy for earning credibility within the organization to be an authoritative expert on the pharmacy care of individuals with cardiovascular disease.

IO Identify opportunities for the cardiology pharmacy specialist to earn credibility with members of an interdisciplinary team.

IO Identify opportunities for the cardiology pharmacy specialist to earn credibility within the organization.

Goal R1.2 Critically evaluate core biomedical literature resources appropriate for cardiology pharmacy practice.

OBJ R1.2.1 (Application) Use knowledge of cardiovascular medicine resources to apply core primary, secondary, and tertiary biomedical literature resources appropriate for cardiology pharmacy practice.

Goal R1.3 Contribute the cardiology pharmacy specialist's perspective to an organization's technology and automation systems decisions.

OBJ R1.3.1 (Synthesis) When appropriate, participate in the organization's design of its technology and automation systems used in patient care.

IO Explain the cardiology pharmacy specialist's role in contributing to the design of technology systems (e.g., CPOE, PDAs, software, smart pumps) for the organization.

IO Explain the cardiology pharmacy specialist's role in contributing to decisions regarding automation systems.

OBJ R1.3.2 (Synthesis) When appropriate, participate in the organization's implementation of its technology and automation systems.

IO Explain factors to consider when implementing technology and automation systems that affect the care of patients with cardiovascular disease.

OBJ R1.3.3 (Synthesis) When appropriate, participate in the organization's quality improvement of its technology and automation systems.

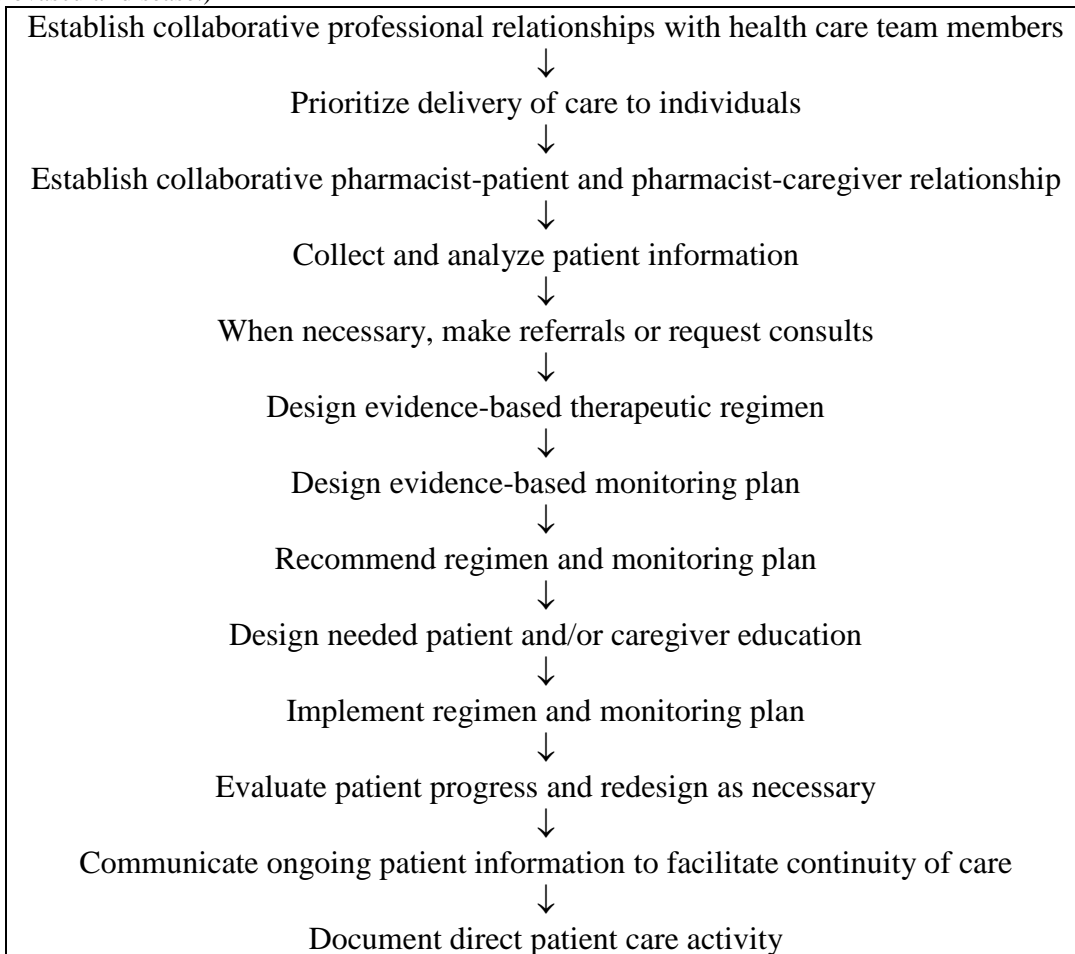
IO Explain the importance of ongoing evaluation of the organization's technology and automation systems.

IO Explain the cardiology pharmacy specialist's role in contributing to the quality improvement of technology systems for the organization.

IO Explain the cardiology pharmacy specialist's role in contributing to the quality improvement of the organization's automation systems.

Outcome R2: Optimize the outcomes of patients with acute and chronic cardiovascular disease in various settings through the expert provision of evidence-based², patient-centered medication therapy as an integral part of an interdisciplinary team.

(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.)



² Evidence-based medicine -- the integration of best research evidence, clinical expertise, and patient values in making decisions about the care of individual patients (Institute of medicine, 2001; Straus and Sackett, 1998). *Best research evidence* includes evidence that can be quantified, such as that from randomized controlled trials, laboratory experiments, clinical trials, epidemiological research, and outcomes research and evidence derived from the practice knowledge of experts, including inductive reasoning (Guyatt et al., Higgs et al., 2001). *Clinical expertise* is derived from the knowledge and experience developed over time from practice, including inductive reasoning. *Patient values and circumstances* are the unique preferences, concerns, expectations, financial resources, and social supports that are brought by each patient to a clinical encounter. (Institute of Medicine. Health professions education: a bridge to quality. Washington, DC: The National Academies Press; 2001.)

Goal R2.1 Develop collaborative professional relationships with members of the interdisciplinary and/or interprofessional teams that care for patients with cardiovascular disease.

OBJ R2.1.1 (Synthesis) Implement a strategy that effectively develops cooperative, collaborative, and communicative working relationships with members of an interdisciplinary team that cares for patients with cardiovascular disease.

IO Explain the training and expected areas of expertise of the members of the interdisciplinary team with which one works.

IO For each of the professions with which one interacts on an interdisciplinary team, explain the profession's view of its role and responsibilities in collaborations on patient-centered care and their expectations of the pharmacist's role in collaborations on patient-centered care.

IO Explain the professional dynamics of the different services comprising the health care team.

IO Identify the interpersonal dynamics of each member of the interdisciplinary health care team with which one works.

IO Explain a style of interaction that is effective in working with cardiology teams.

Goal R2.2 For a caseload of patients, prioritize the delivery of pharmacy care.

OBJ R2.2.1 (Evaluation) Appropriately prioritize the care of patients with cardiovascular disease if given limited time and multiple patient care responsibilities.

IO Explain factors to consider when determining priority for pharmacy care.

IO Explain how the complexity or severity of patient problems may mandate urgency of care and reordering of current priorities for care.

Goal R2.3 Establish collaborative pharmacist-patient and pharmacist-caregiver relationships.

OBJ R2.3.1 (Synthesis) Implement a strategy that effectively establishes a patient-centered pharmacist-patient or pharmacist-caregiver relationship.

IO Explain the importance of demonstrating respect for the patient's individuality, emotional needs, values, and life issues in a patient-centered, pharmacist-patient relationship.

IO Explain the importance of describing to the patient the cardiology pharmacy specialist's role in his/her care.

IO Explain potential barriers to relationship development with individual patients (e.g., age, mental status, educational level, health literacy).

IO Explain the views of diverse cultures and religions on the conceptualization of illness, treatment, and death and dying.

Goal R2.4 Collect and analyze patient information.

OBJ R2.4.1 (Analysis) Collect and organize all patient-specific information needed by the cardiology pharmacy specialist to anticipate, prevent, detect, and/or resolve medication-related problems and to make appropriate evidence-based, patient-centered medication therapy recommendations as part of the interdisciplinary team caring for patients with cardiovascular disease. (See Appendix)

- IO Identify the types of patient-specific information the cardiology pharmacy specialist requires to anticipate, prevent, detect, and/or resolve medication-related problems and to make appropriate evidence-based, patient-centered medication therapy recommendations.*
- IO Accurately use medical terminology and abbreviations particular to the discussion of a cardiovascular disease.*
- IO Explain signs and symptoms, epidemiology, risk factors, etiology, pathogenesis, pathophysiology, natural history of disease, clinical presentation, clinical course, and clinical treatment of cardiovascular diseases.*
- IO Explain the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacogenomics, pharmacoeconomics, usual regimen (dose, schedule, form, route, and method of administration), indications, contraindications/precautions, interactions, adverse reactions, and therapeutics of medications used to treat cardiovascular diseases.*
- IO Where known, explain the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacogenomics, pharmacoeconomics, usual regimen (dose, schedule, form, route, and method of administration), indications, contraindications/precautions, interactions, adverse reactions, and therapeutics of nontraditional (complementary and alternative) medications used to treat patients with cardiovascular diseases.*
- IO Explain the meaning of the results of diagnostic tests and physiologic monitoring commonly performed on patients with cardiovascular diseases.*
- IO Explain the significance of physical findings needed to assess patients with cardiovascular diseases.*
- IO When appropriate, measure patient vital signs and use appropriate physical assessment skills to build the patient information base.*
- IO Explain the meaning of the results of laboratory tests needed to assess patients with cardiovascular diseases.*
- IO Explain the impact on information gathering of the patient who is not able to communicate.*

- OBJ R2.4.2 (Analysis) Determine the presence of or potential for medication therapy problems in a patient with cardiovascular disease, which may include:
1. Medication used with no medical indication
 2. Patient has medical conditions for which there is no medication prescribed
 3. Medication prescribed inappropriately for a particular medical condition
 4. Immunization regimen is incomplete
 5. Current medication therapy regimen contains something inappropriate (dose, dosage form, duration, schedule, route of administration, method of administration)
 6. There is therapeutic duplication
 7. Medication to which the patient is allergic or sensitive has been prescribed
 8. There are adverse drug or device-related events or potential for such events

9. There are clinically significant drug-drug, drug-disease, drug-food, or drug-laboratory/diagnostic test interactions or potential for such interactions
10. Medical therapy has been complicated by social, recreational, nonprescription, complementary, or alternative drug use by the patient or others
11. Patient not receiving full benefit of prescribed medication therapy
12. There are problems arising from the financial impact of medication therapy on the patient
13. Patient lacks understanding of medication therapy
14. Patient not adhering to medication regimen

OBJ R2.4.3 (Analysis) Using an organized collection of patient-specific information, prioritize the patient's health care needs.

Goal R2.5 When appropriate, make patient referrals to and/or request consults from other health care professionals.

OBJ R2.5.1 (Evaluation) As needed, when presented with a patient with cardiovascular disease with a health care need that cannot be met by the cardiology pharmacy specialist, make a referral to the appropriate health care professional.

OBJ R2.5.2 (Evaluation) As needed, when presented with a patient with cardiovascular disease with a health care need that cannot be met by the cardiology pharmacy specialist, request a consult from an appropriate health care professional.

OBJ R2.5.3 (Synthesis) Devise a plan for follow-up on a consult or referral for a patient with cardiovascular disease.

Goal R2.6 Design evidence-based therapeutic regimens for patients with cardiovascular diseases.

OBJ R2.6.1 (Synthesis) Specify therapeutic goals for a patient with cardiovascular disease incorporating the principles of evidence-based medicine that integrate patient-specific data, disease and medication-specific information, ethics, and quality-of-life considerations.

IO Identify the sources of cardiovascular disease management and drug-use guidelines.

IO Identify updates to a cardiovascular disease management guideline through a review of the primary literature.

OBJ R2.6.2 (Synthesis) Design a patient-centered regimen that meets the evidence-based therapeutic goals established for a patient with cardiovascular disease; integrates patient-specific information, disease and drug information, ethical issues and quality-of-life issues; and considers pharmacogenomic and pharmacoeconomic principles.

Goal R2.7 Design evidence-based monitoring plans for patients with cardiovascular disease.

OBJ R2.7.1 (Synthesis) Design a patient-centered, evidenced-based monitoring plan for a therapeutic regimen that effectively evaluates achievement of the specified therapeutic goals set for a patient with cardiovascular disease.

IO State customary monitoring parameters for cardiovascular diseases.

IO State customary monitoring parameters for medications commonly prescribed for cardiovascular diseases.

- Goal R2.8 Recommend regimens and monitoring plans for patients with cardiovascular diseases.
- OBJ R2.8.1 (Application) Recommend a patient-centered, evidence-based therapeutic regimen and corresponding monitoring plan to other members of the interdisciplinary team that cares for a patient with cardiovascular disease in a way that is systematic, logical, accurate, timely, succinct, and secures consensus from the team.
- OBJ R2.8.2 (Application) Discuss the proposed patient-centered, evidence-based therapeutic regimen and corresponding monitoring plan with the patient with cardiovascular disease and/or caregiver in a way that is systematic, logical, accurate, timely, sensitive, and secures consensus from the patient and/or caregiver.
- Goal R2.9 Design education for the regimen and monitoring plan for a patient with cardiovascular disease.
- OBJ R2.9.1 (Analysis) Accurately identify what education will be essential to a patient with cardiovascular disease or caregiver's understanding of the therapeutic regimen and monitoring plan, how to adhere to it, and the importance of adherence.
- OBJ R2.9.2 (Synthesis) Design an effective and efficient plan for meeting the educational needs of a patient with cardiovascular diseases, including information on medication therapy, adverse effects, monitoring, adherence, appropriate use, handling, and medication administration.
- Goal R2.10 Implement regimens and monitoring plans for patients with cardiovascular diseases.
- OBJ R2.10.1 (Application) When appropriate, initiate the patient-centered, evidence-based therapeutic regimen and monitoring plan for a patient with cardiovascular disease according to the organization's policies and procedures.
- IO Explain the organization's policies and procedures for ordering inpatient and outpatient medications.*
- IO Explain the organization's policies and procedures for ordering tests.*
- OBJ R2.10.2 (Complex Overt Response) When appropriate, exercise skill in the administration or supervision of the administration of the therapeutic regimen for a patient with cardiovascular disease.
- IO Explain how to secure credentials for administering vaccinations.*
- IO Explain the detailed steps and checkpoints in the administration of medications unique to patients with cardiovascular diseases.*
- OBJ R2.10.3 (Application) When necessary, contribute to the work of the team that secures access for drugs used in the regimen of a patient with cardiovascular disease.
- IO Explain patient assistance programs available for medications.*
- IO Explain the cardiology pharmacy specialist's role (versus other interdisciplinary team members) in securing payer coverage or patient assistance.*
- IO Explain circumstances in which it may be appropriate to redesign a patient's medication regimen in order to ensure that a patient will have financially viable access to the prescribed medications.*

- IO Explain various approaches used to adjust medication regimens in order to facilitate patient access to medications.*
- IO Explain organizational policies and procedures for securing compassionate use medications needed for an individual patient.*
- OBJ R2.10.4 (Application) Use effective patient education techniques to provide counseling to a patient with cardiovascular disease and/ or the caregiver, including information on the disease state, medication therapy, adverse effects, monitoring, adherence, appropriate use, handling, storage, medication administration, and any other therapeutic interventions.
- OBJ R2.10.5 (Application) When appropriate, make follow-up appointments as a component of the monitoring plan.
- Goal R2.11 Evaluate patient progress and redesign regimens and monitoring plans.
 - OBJ R2.11.1 (Evaluation) Accurately assess the progress of a patient with cardiovascular disease toward the therapeutic goal(s).
 - OBJ R2.11.2 (Application) Ensure that accurate and timely patient-specific information reaches those who need it at the appropriate time.
 - IO Explain how to assess acuity of monitoring parameters in patients with cardiovascular disease.*
 - OBJ R2.11.3 (Synthesis) Redesign the regimen and monitoring plan of a patient with cardiovascular disease as necessary, based on evaluation of monitoring data and therapeutic outcomes.
 - IO Explain potential reasons for patient failure to attain therapeutic goals.*
- Goal R2.12: Communicate pertinent patient information to facilitate continuity of pharmacy care of patients with cardiovascular disease.
 - OBJ R2.12.1 (Synthesis) Formulate a strategy for continuity of pharmacy care across all applicable treatment settings.
 - IO Explain potential problems that may place patients at risk in various treatment settings (e.g., hospital, clinic, home) or upon change in level of care.*
 - IO Explain accrediting organizations' requirements for medication reconciliation across the continuum of care.*
 - IO Explain methods for coordinating information between multiple pharmacy and other health care workers serving the needs of patients with cardiovascular diseases that will facilitate the provision of pharmacy care.*
 - OBJ R2.12.2 (Application) When given a patient with cardiovascular disease who is transitioning from one health care setting to another, communicate pertinent pharmacotherapeutic information to the receiving health care professionals.
- Goal R2.13: Document direct patient-care activities appropriately.
 - OBJ R2.13.1 (Analysis) Appropriately select direct patient-care activities for documentation.
 - IO Explain the organization's policies and procedures for identifying activities that must be documented.*
 - OBJ R2.13.2 (Application) Use effective communication practices when writing timely and authoritative consults and notes according to the organization's policies and procedures.

IO Explain unique considerations for writing notes concerning the care of patients with cardiovascular disease.

Outcome R3: Demonstrate leadership and practice management skills.

Goal R3.1 Exhibit the ongoing development of essential personal skills of a cardiology pharmacy practice leader.

OBJ R3.1.1 (Characterization) Practice self-managed continuing professional development with the goal of improving the quality of one's own performance through self-assessment and change.

IO State criteria for judging one's performance of tasks that are critical in one's own practice.

IO Explain the role of participation in pharmacy professional organization meetings in the ongoing development of expertise in cardiology pharmacy.

IO Explain the importance of staying current with pertinent cardiovascular biomedical literature.

IO Explain the importance of staying current with published guidelines related to the care of patients with cardiovascular diseases.

IO Explain the role of board certification in the development of expertise in cardiology pharmacy practice.

OBJ R3.1.2 (Characterization) Demonstrate commitment to the professional practice of cardiology pharmacy through active participation in the activities of local, state, and/or national pharmacy and cardiology professional organizations.

IO Assess the relevance of membership or participation in various professional organizations associated with cardiology pharmacy practice.

IO Explain the importance of contributing to the work of professional organizations in advancing the visibility of the pharmacist's role in the care of patients with cardiovascular disease.

OBJ R3.1.3 (Synthesis) Devise an effective plan for achieving a reasonable balance of professional and personal life.

OBJ R3.1.4 (Characterization) Display integrity in professional relationships and actions.

IO Explain ethical dilemmas that may confront the cardiology pharmacy specialist.

IO Explain the system of ethical reasoning employed in arriving at a particular ethical decision.

IO Explain the implications of the Belmont Report³ for ethical decision-making in pharmacy.

IO Explain the implications of HIPAA regulations for cardiology pharmacy practice.

IO Explain how being a professional encompasses all aspects of one's life.

OBJ R3.1.5 (Application) Adhere to the requirements of the organization's policy in all interactions with the pharmaceutical industry.

³ The Belmont Report.: Ethical Principles for the Protection of Human Subjects of Research. Report from the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (resource on the World Wide Web). URL: <http://ohsr.od.nih.gov/guidelines/guidelines.html>. Office of Human Subjects Research, National Institutes of Health. 1979 April 18, Available from Internet. Accessed 2007April 2.

- IO Explain the full range of cardiovascular disease-related drug information resources that are available.*
- IO Explain content and applicability of the above mentioned specialized resources for drug information.*
- IO Explain the principles for use of search engines when the search needs to be at an advanced level.*
- OBJ R4.1.3 (Evaluation) Accurately interpret statistical information presented in a piece of biomedical literature.
 - IO Explain the application and interpretation of advanced statistical methods.*
 - IO Determine instances in which a study conclusion is erroneously supported by data display.*
- OBJ R4.1.4 (Evaluation) Determine the internal and external validity of a piece of biomedical literature.
- OBJ R4.1.5 (Evaluation) When presented with conflicting biomedical literature, determine the validity and applicability for a specific clinical pathway, protocol, or medication guideline.
- OBJ R4.1.6 (Synthesis) Develop a clinical pathway, protocol, or guideline for use in the care of patients with or at risk of cardiovascular disease based on best evidence and the characteristics of the local environment and patients.
 - IO Explain factors to consider when tailoring an existing clinical pathway, protocol, or guideline to the needs of one's organization.*
 - IO Explain available resources for the development of clinical pathways, protocols, or guidelines.*
- OBJ R4.1.7 (Synthesis) Formulate a strategy that will allow for successful implementation of a clinical pathway, protocol, or guideline for the care of patients with or at risk of cardiovascular disease.
 - IO Explain the importance of using an interdisciplinary approach to implementation of a cardiology clinical pathway, protocol, or guideline.*
- Goal R4.2 Participate in the maintenance of the organization's formulary for medications used in the care of patients with or at risk of cardiovascular disease.
 - OBJ R4.2.1 (Synthesis) Formulate effective strategies for communicating formulary restrictions to providers of care to patients with or at risk of cardiovascular disease.
 - IO Explain routes of communication of formulary information to providers of care to patients with cardiovascular disease.*
 - IO Identify instances when formulary changes should be communicated immediately.*
 - OBJ R4.2.2 (Evaluation) When presented with shortage of a medication used in the care of patients with or at risk of cardiovascular disease, identify appropriate alternative medications.
 - IO State resources for identifying medications in short supply.*
 - IO Explain the organization's system for communicating information regarding medication shortages.*
 - IO Explain a strategy for making optimal choices for alternative medications.*

- OBJ R4.2.3 (Evaluation) When the needs of a particular patient with or at risk of cardiovascular disease warrant, determine if a non-formulary medication should be considered for therapy.
 - IO Identify the appropriate literature that supports the use of a non-formulary medication in a clinical situation.*
 - IO Explain the organization's system for approving, obtaining, and handling non-formulary medication used by patients.*
- OBJ R4.2.4 (Synthesis) Contribute to the activities of the pharmacy and therapeutics (P&T) committee concerned with medications used in the treatment of patients with or at risk of cardiovascular disease.
- OBJ R4.2.5 (Application) Document and report new, unusual, or severe pharmacotherapeutic events (e.g., adverse drug reactions, drug interactions, medication errors, and drug/device/assay defects).
- Goal R4.3 Assist the organization in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the use of medications (e.g., The Joint Commission requirements; ASHP standards, statements, and guidelines; Center for Medicare and Medicaid Services; state and federal laws regulating pharmacy practice; OSHA regulations).
 - OBJ R4.3.1 (Comprehension) Explain the legal, regulatory, and safety requirements related to the use of medications used in the care of patients with or at risk of cardiovascular disease.
 - OBJ R4.3.2 (Evaluation) Determine appropriate documentation to meet accreditation, legal, regulatory, and safety requirements for pharmacy.

Outcome R5: Contribute to the body of cardiovascular pharmacotherapy knowledge.

- Goal R5.1 Conduct a cardiovascular pharmacotherapy-related research project using effective research and project management skills.
 - OBJ R5.1.1 (Synthesis) Identify a topic of significance for a cardiovascular pharmacotherapy-related research project.
 - IO Explain the types of resident projects (e.g., prospective, retrospective, clinical trials, meta-analysis, cost-effectiveness analysis) that will meet residency program project requirements and timeframe.*
 - IO Explain how one determines if a potential project topic is of significance in one's particular practice setting.*
 - IO Explain how to conduct an efficient and effective literature search for the background analysis.*
 - IO Explain how to generate a research question(s) to be answered by an investigation.*
 - OBJ R5.1.2 (Synthesis) Formulate a feasible design for a cardiovascular pharmacotherapy-related research project.
 - IO Explain the elements of a project proposal.*
 - IO Explain how to identify health care personnel who will be affected by the conduct of the project and strategies for gaining their cooperation.*
 - IO Explain how to determine a timeline with suitable milestones that will result in project completion by an agreed-upon date.*
 - IO Explain various methods for constructing data collection tools.*

- OBJ R5.1.3 (Comprehension) Explain the role of the Institutional Review Board (IRB) in conducting research.
IO Compare and contrast the various types of IRB reviews, including exempt, expedited, full board, and educational.
- OBJ R5.1.4 (Synthesis) Secure any necessary approvals, including IRB, for a cardiovascular pharmacotherapy-related research project.
IO Explain the importance of good interdisciplinary/interprofessional relationships on gaining approval for a research project.
IO Explain how to identify stakeholders who must approve a particular project.
IO Explain the components that make up a budget for a project.
IO Explain strategies for seeking funding for a research project.
- OBJ R5.1.5 (Synthesis) Implement a cardiovascular pharmacotherapy-related research project as specified in its design.
IO Explain strategies for keeping one's work on a project at a pace that matches the projected timeline.
IO Given a particular approved residency project, explain methods for organizing and maintaining project materials and documentation of the project's ongoing implementation.
IO Explain methods of data analysis.
IO Explain issues surrounding confidentiality of patient information accessed for a research study.
- OBJ R5.1.6 (Synthesis) Effectively present the results of a cardiovascular pharmacotherapy-related research project.
- OBJ R5.1.7: (Synthesis) Successfully employ accepted manuscript style to prepare a final report of a cardiovascular pharmacotherapy-related research project.
- Goal R5.2 Engage in the publication process.
- OBJ R5.2.1 (Comprehension) Explain the benefits, to the practitioner and the profession, of contributing to the cardiovascular pharmacotherapy literature.
- OBJ R5.2.2 (Synthesis) Write a research article, review, or case report related to cardiovascular pharmacotherapy that is suitable for publication.
IO Use a standard style for biomedical journals in the preparation of research articles, reviews, or case reports submitted for publication.
IO Given a specific article, identify appropriate journals to which that article might be submitted for publication.
IO Given an identified topic related to cardiovascular pharmacotherapy, appraise the potential to publish an article on that topic.
IO Explain the rules governing who may declare authorship of a given work.
- OBJ R5.2.3 (Application) Follow the submission requirements of an appropriate peer-reviewed publication to submit a manuscript for publication.
- Goal R5.3 Conduct effective peer review of materials for publication or presentation.
- OBJ R5.3.1 (Evaluation) Participate in the peer review of a cardiovascular-related submission for publication or presentation.
IO Explain the characteristics of an effective peer review.
IO Explain how to become a reviewer for poster abstracts for professional organizations.

IO Explain how to become a reviewer for professional journals.

Outcome R6: Demonstrate excellence in the provision of training and educational activities for health care professionals, health care professionals in training, and the public.

Goal R6.1 Provide effective education and training to health care professionals and health care professionals in training.

OBJ R6.1.1 (Synthesis) Use effective educational techniques in the design of an educational/training activity.

IO Identify emerging issues in cardiovascular medicine suitable for interdisciplinary educational sessions.

IO Explain the differences in effective educational strategies and appropriate content when teaching colleagues, residents, students, and health professionals in other disciplines.

IO Explain the steps required to design an effective educational or training activity.

IO Explain the concept of learning styles and its influence on the design of instruction

IO Write appropriately worded educational objectives.

IO Explain how different instructional delivery systems (e.g., demonstration, written materials, video) foster different types of learning.

IO Explain effective teaching approaches for the various types of learning (e.g., imparting information, teaching psychomotor skills, inculcation of new attitudes).

OBJ R6.1.2 (Synthesis) Design an assessment strategy that appropriately measures the specified objectives for education or training and fits the learning situation.

IO Explain appropriate assessment techniques for assessing the learning outcomes of educational or training programs.

OBJ R6.1.3 (Application) Use skill in the four preceptor roles employed in practice-based teaching (direct instruction, modeling, coaching, and facilitation).⁴

IO Explain the stages of learning that are associated with each of the preceptor roles.

OBJ R6.1.4 (Application) Use public speaking skills to speak effectively to a large group.

IO Explain techniques that can be used to enhance audience interest.

IO Explain techniques that can be used to enhance audience understanding of one's topic.

IO Explain speaker habits that distract the audience.

OBJ R6.1.5 (Application) Use public speaking skills to speak effectively in a small group.

Goal R6.2 Create pertinent, evidence-based medication-use information for health care professionals.

⁴ Nimmo, CM. Developing training materials and programs: creating educational objectives and assessing their attainment. In: Nimmo CM, Guerrero R, Greene SA, Taylor JT, eds. Staff development for pharmacy practice. Bethesda, MD: ASHP; 2000.

- OBJ R6.2.1 (Synthesis) Write an evidence-based medication-use newsletter article or bulletin related to cardiovascular medicine for health care professionals using appropriate grammar, punctuation, and style.
 - IO Identify medication-use topics that warrant information distribution.*
 - IO Select an appropriate publication format for medication-use information (e.g., web page, newsletter, correspondence) for health professionals.*
 - IO Explain the value of creating polished and professional written and visual materials.*
- Goal R6.3 Design and deliver education programs to the public that center on health improvement, wellness, and prevention of cardiovascular disease.
 - OBJ R6.3.1 (Synthesis) Participate in the design of an educational program for the public that centers on health improvement, wellness, or the prevention of cardiovascular disease.
 - IO Explain appropriate cardiovascular medication-related educational topics for health care support groups.*
 - IO Explain appropriate cardiovascular medication-related educational topics for the general public.*
 - OBJ R6.3.2 (Synthesis) Use appropriate educational techniques to deliver an educational program to the public that centers on health improvement, wellness, or prevention of cardiovascular disease.

Outcome R7: Participate in the management of medical emergencies.

- Goal R7.1 Participate in the management of patients experiencing medical emergencies.
 - OBJ R7.1.1 (Synthesis) Exercise skill as a team member in the management of a patient experiencing a medical emergency according to the organization's policies and procedures.
 - IO Explain appropriate medication therapy in medical emergency situations.*
 - IO Explain unique considerations when preparing and dispensing medications and calculating doses during a medical emergency.*
 - OBJ R7.1.2 (Evaluation) Achieve Advanced Cardiac Life Support (ACLS) certification.
 - OBJ R7.1.3 (Complex Overt Response) When administration is allowed by the organization, exercise skill in the administration of emergency medications.

<p style="text-align: center;">Elective Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Cardiology</p>
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Outcome E1: Establish a collaborative interdisciplinary and/or interprofessional practice.

Goal E1.1 Participate in the development and implementation of collaborative interdisciplinary and/or interprofessional practice agreements.

OBJ E1.1.1 (Comprehension) Explain the process by which collaborative interdisciplinary and/or interprofessional practice agreements are developed and implemented.

IO State the practice area settings in which cardiology pharmacy specialists practice.

IO Explain the role of collaborative practice agreements in defining the scope of an individual cardiology pharmacy specialist's practice.

IO Explain the legal environment in which collaborative practice agreements are possible.

IO For a given situation, identify the stakeholders in the formation of a collaborative practice agreement.

IO Explain strategies for establishing a collaborative practice agreement.

IO Explain the collaborative relationships that are necessary to successful fulfillment of the pharmacist's role in a collaborative practice.

OBJ E1.1.2 (Synthesis) Develop a proposal (may be hypothetical) for a collaborative interdisciplinary and/or interprofessional practice agreement that could be used in a cardiology pharmacy practice area.

IO State the categories of information provided in a typical proposal to establish a collaborative practice.

Goal E1.2 Contribute to the development of a new cardiology pharmacy service or to the enhancement of an existing service.

OBJ E1.2.1 (Evaluation) Assess a current cardiology pharmacy service or program to determine if it meets the stated goals.

OBJ E1.2.2 (Synthesis) Participate in the writing of a proposal (may be hypothetical) for a marketable, new or enhanced cardiology pharmacy service.

IO Accurately identify unmet customer (i.e., patient, physicians, and other health care providers) needs.

IO Explain the organization's desired format for a proposal for a new or enhanced pharmacy service.

IO Explain the components of a new service.

IO Explain the role of other health care providers in meeting the needs of patients involved in a new service.

IO Explain the process by which pharmacy databases are used to develop a new service.

IO Use modeling to predict the financial outcome(s) of implementing a proposed new or enhanced service on meeting unmet customer needs.

IO Accurately predict system and human resource needs for developing and implementing a new or enhanced service.

- IO* *Accurately predict the outcome(s) for patients of implementing a new or enhanced service.*
- IO* *Accurately predict financial benefit to the organization of implementing a new or enhanced service.*
- OBJ E1.2.3 (Synthesis) Formulate an effective strategy for promoting a proposal (may be hypothetical) for a new or enhanced cardiology pharmacy service.
 - IO* *Explain how to identify the stakeholders for a specific proposal.*
- OBJ E1.2.4 (Synthesis) Devise effective plans (may be hypothetical) for marketing a new or enhanced cardiology pharmacy service, including the recruitment of patients.
 - IO* *Explain the components of a marketing plan.*
 - IO* *Explain why and how potential shifts in market share should be factored into decisions on the marketability of a service.*
- OBJ E1.2.5 (Synthesis) Formulate a plan (may be hypothetical) for full implementation of a new or enhanced cardiology pharmacy service or program.
 - IO* *Explain the components of an implementation plan for a new or an improved service or program.*
- OBJ E1.2.6 (Synthesis) Manage the implementation of a new or enhanced cardiology pharmacy service or program.
 - IO* *Explain the kinds of tasks involved in managing the implementation of a new service or program.*

Outcome E2: Where the cardiology pharmacy practice is within a setting that allows pharmacist credentialing, successfully apply for credentialing.

- Goal E2.1 Successfully petition for credentialing as a cardiology pharmacy specialist.
 - OBJ E2.1.1 (Application) Follow established procedures to successfully apply for credentialing as a cardiology pharmacy specialist.
 - IO* *Explain the importance of credentialing and how that influences practice.*
 - IO* *State the practice setting's policy for applying to be credentialed as a cardiology pharmacy specialist.*

Outcome E3: Demonstrate skills required to function in an academic setting.

- Goal E3.1 Understand faculty roles and responsibilities.
 - OBJ E3.1.1 (Comprehension) Explain variations in the expectations of different colleges/schools of pharmacy for teaching, practice, research, and service.
 - IO* *Discuss how the different missions of public versus private colleges/schools of pharmacy can impact the role of faculty members.*
 - IO* *Discuss maintaining a balance between teaching, practice, research and service.*
 - IO* *Discuss the relationships between scholarly activity and teaching, practice, research and service.*
 - OBJ E3.1.2 (Analysis) Explain the role and influence of faculty in the academic environment.
 - IO* *Explain the responsibilities of faculty in governance structure (e.g. the faculty senate, committee service).*

- IO *Describe the responsibilities of faculty (e.g. curriculum development and committee service) related to teaching, practice, research, and service roles.*
- OBJ E3.1.3 (Comprehension) Describe the academic environment.
 - IO *Describe how the decisions by university and college administration impact the faculty.*
 - IO *Discuss outside forces (e.g. change in the profession, funding source, accreditation requirements) that impact administrator and faculty roles.*
- OBJ E3.1.4 (Comprehension) Describe the types and ranks of faculty appointments.
 - IO *Explain the various types of appointments (e.g. non-tenure, tenure-track, and tenured faculty).*
 - IO *Differentiate among the various ranks of faculty (e.g. instructor, assistant professor, associate professor, full professor).*
 - IO *Discuss the role and implications of part-time and adjunct faculty as schools continue to expand and faculty shortages occur.*
- OBJ E3.1.5 (Comprehension) Discuss the promotion and/or tenure process for each type of appointment.
 - IO *Identify the types of activities that are considered in the promotion process.*
 - IO *Identify the types of activities that are considered for tenure.*
- OBJ E3.1.6 (Application) Identify resources available to help develop academic skills.
 - IO *Explain the role of academic-related professional organizations (e.g. AACCP) in faculty professional development.*
 - IO *Identify resources to help develop teaching skills and a teaching philosophy.*
- OBJ E3.1.7 (Comprehension) Explain the characteristics of a typical affiliation agreement between a college of pharmacy and a practice site (e.g., health system, hospital, clinic, retail pharmacy).
 - IO *Explain how the political environments of either a college or a practice site may affect the other.*
- Goal E3.2 Exercise teaching skills essential to pharmacy faculty.
 - OBJ E3.2.1 (Synthesis) Develop an instructional design for a class session, module, or course.
 - IO *Construct a student-centered syllabus.*
 - IO *Construct educational objectives for a class session, module, or course that is appropriate to the audience.*
 - IO *Identify appropriate instructional strategies for the class session, module, or course to achieve the objectives.*
 - IO *Consider assessment tools that measure student achievement of the educational objectives.*
 - OBJ E3.2.2 (Synthesis) Prepare and deliver didactic instruction on a topic relevant to the specialized area of pharmacy residency training.
 - IO *Identify educational technology that could be used for a class session, module, or course (e.g., streaming media, course management software, audience response systems).*
 - IO *Create instructional materials appropriate for the topic and audience.*

- IO Identify strategies to deal with difficult learners.*
- IO Given feedback from teaching evaluations (e.g. student and or peer), devise a plan to incorporate improvements in future instruction.*
- OBJ E3.2.3 (Application) Develop and deliver cases for workshops and/or exercises for laboratory experiences.
 - IO Identify the appropriate level of case-based teachings for small group instruction.*
 - IO Identify appropriate exercises for laboratory experiences.*
 - IO Provide appropriate and timely feedback to improve performance.*
- OBJ E3.2.4 (Application) Serve as a preceptor or co-preceptor utilizing the four roles employed in practice-based teaching (direct instruction, modeling, coaching and facilitation).
 - IO Assess the learner's skill level to determine the appropriate preceptor strategy for providing practice-based teaching.*
 - IO Given performance-based criteria, identify ways to provide constructive feedback to learners.*
 - IO Develop strategies to promote professional behavior.*
 - IO Identify strategies to deal with difficult learners in the practice setting.*
 - IO Given a diverse learner population, identify strategies to interact with all groups with equity and respect.*
- OBJ E3.2.5 (Analysis) Develop a teaching experience for a practice setting (e.g., introductory or advanced pharmacy experience).
 - IO Create educational goals and objectives to be achieved.*
 - IO Develop activities that will allow achievement of identified educational goals and objectives.*
 - IO Identify how and when feedback should be provided.*
 - IO Identify other preceptors for the experience, if appropriate.*
 - IO Determine training that might be needed for the preceptors to deliver student education.*
 - IO Identify potential challenges of precepting and providing patient care services simultaneously.*
- OBJ E3.2.6 (Synthesis) Design an assessment strategy that appropriately measures the specified educational objectives for the class session, module, course, or rotation.
 - IO Identify appropriate techniques for assessing learning outcomes in various educational settings [e.g., written examinations, oral examinations, practical examinations, Objective Structured Clinical Examination (OSCE)].*
 - IO Develop examination questions to assess the knowledge, skills, attitudes and behaviors that are appropriate to the learner's level and topic.*
 - IO Discuss the various methods for administering examination questions (e.g., computerized testing, paper testing).*
- OBJ E3.2.7 (Evaluation) Create a teaching portfolio.
 - IO Define the concept of a teaching portfolio and describe its primary purpose*
 - IO Outline the steps in building a teaching portfolio.*

- IO Develop a personal teaching philosophy to guide one's teaching efforts and facilitate student learning.*
- OBJ E3.2.8 (Evaluation) Compare and contrast methods to prevent and respond to academic and profession dishonesty.
 - IO Evaluate physical and attitudinal methods to prevent academic dishonesty.*
 - IO Discuss methods of responding to incidents of academic dishonesty.*
 - IO Discuss the role of academic honor committees in cases of academic dishonesty.*
 - IO Identify examples and methods to address unprofessional behavior in learners.*
- OBJ E3.2.9 (Comprehension) Explain the relevance of copyright laws to developing teaching materials.
 - IO Discuss copyright regulations as related to reproducing materials for teaching purposes.*
 - IO Discuss copyright regulations as related to linking and citing on-line materials.*

Outcome E4: Conduct outcomes research.

- Goal E4.1 Participate in cardiology clinical, humanistic and economic outcomes analyses.
 - OBJ E4.1.1 (Evaluation) Contribute to a cardiology prospective clinical, humanistic and/or economic outcomes analysis.
 - IO Explain the principles and methodology of basic pharmacoeconomic analyses.*
 - IO Explain the purpose of a prospective clinical, humanistic or economic outcomes analysis.*
 - IO Explain study designs appropriate for a prospective clinical, humanistic and economic outcomes analysis.*
 - IO Explain the technique and application of modeling.*
 - IO Explain the types of data that must be collected in a prospective clinical, humanistic and economic outcomes analysis.*
 - IO Explain possible reliable sources of data for a clinical, humanistic and economic outcomes analysis.*
 - IO Explain methods for analyzing data in a prospective clinical, humanistic and economic outcomes analysis.*
 - IO Explain how results of a prospective clinical, humanistic and economic outcomes analysis can be applied to internal business decisions and modifications to a customer's formulary or benefit design.*
 - IO Explain the value of participating in an interdisciplinary/interprofessional research group.*
 - IO Explain the value of utilizing a group of mentors for research.*
 - OBJ E4.1.2 (Evaluation) Contribute to a cardiology retrospective clinical, humanistic, and/or economic outcomes analysis.
 - IO Explain the purpose of a retrospective clinical, humanistic or economic outcomes analysis.*
 - IO Explain study designs appropriate for a retrospective clinical, humanistic and economic outcomes analysis.*

- IO Explain the types of data that must be collected in a retrospective clinical, humanistic and economic outcomes analysis.*
- IO Explain the content and utilization of reports and audits produced by the pharmacy department.*
- IO Explain possible reliable sources of data for a retrospective clinical, humanistic and economic outcomes analysis.*
- IO Explain methods for analyzing data in a retrospective clinical, humanistic and economic outcomes analysis.*
- IO Explain the impact of limitations of retrospective data on the interpretation of results.*

Outcome E5: Demonstrate additional skills for managing and improving the medication-use process for patients with cardiovascular diseases.

- Goal E5.1 Identify opportunities for improvement of aspects of the organization's medication-use system affecting patients with cardiovascular diseases.
 - OBJ E5.1.1 (Comprehension) Explain those aspects of the organization's medication-use system affecting patients with cardiovascular diseases and its vulnerabilities to adverse drug events (ADEs).
 - OBJ E5.1.2 (Analysis) Conduct an MUE for some aspect of the medication-use system affecting patients with cardiovascular diseases.
 - OBJ E5.1.3 (Evaluation) Identify opportunities for improvement in aspects of the organization's medication-use system affecting patients with cardiovascular diseases by comparing the medication-use system to relevant best practices.
- Goal E5.2 Design and implement quality improvement changes to aspects of the organization's medication-use system affecting patients with cardiovascular diseases.
 - OBJ E5.2.1 (Synthesis) Design a pilot intervention to change a problematic or potentially problematic aspect of the medication-use system with the objective of improving quality of care for patients with cardiovascular diseases.
 - OBJ E5.2.2 (Synthesis) Implement a pilot intervention to change a problematic or potentially problematic aspect of the medication-use system with the objective of improving quality of care for patients with cardiovascular diseases.
- Goal E5.3 Participate in the maintenance of the organization's formulary for medications used in the care of patients with cardiovascular diseases.
 - OBJ E5.3.1 (Evaluation) Write a monograph for use in recommending an addition or deletion to the organization's formulary for a medication used in the care of patients with cardiovascular diseases based on literature and/or comparative reviews.
 - IO State the elements of a comparative review.*
 - IO State resources to consult in the preparation of a comparative review.*
 - IO Explain the importance of including consideration of efficacy, safety, and cost in the preparation of reviews.*
 - OBJ E5.3.2 (Evaluation) Make recommendations for cardiovascular medication class decisions based on comparative reviews.

Outcome E6: Demonstrate additional skills for serving as an authoritative resource on the optimal use of medications used in the care of patients with cardiovascular disease.

Goal E6.1 Employ advanced literature analysis skills in preparing drug information.

OBJ E6.1.1 (Synthesis) Create an efficient and effective advanced search strategy to prepare a response to a drug information inquiry related to a cardiovascular disease or its treatment.

IO Explain the full range of cardiovascular disease-related drug information resources that are available.

IO Explain content and applicability of the above mentioned specialized sources of drug information.

IO Explain the principles for use of search engines when the search needs to be at an advanced level.

OBJ E6.1.2 (Analysis) Accurately identify the study design employed for a piece of biomedical literature.

IO Explain the key features of epidemiologic and experimental designs and the strengths and weaknesses of each.

OBJ E6.1.3 (Evaluation) Determine if the study design and methodology are appropriate to accomplish the objectives of a piece of biomedical literature.

OBJ E6.1.4 (Evaluation) Accurately interpret statistical information presented in a piece of biomedical literature.

IO Explain the application and interpretation of advanced statistical methods.

IO Determine instances in which a study conclusion is erroneously supported by data display.

OBJ E6.1.5 (Analysis) Identify potential sources of bias in a piece of biomedical literature.

OBJ E6.1.6 (Evaluation) Determine the internal and external validity of a piece of biomedical literature.

OBJ E6.1.7 (Evaluation) Determine if a study's results have applicability for hypothesizing future research or for directing patient care decisions.

OBJ E6.1.8 (Evaluation) When presented with conflicting biomedical literature, determine the validity and applicability for a specific drug information need.

IO Compare and contrast the reputations and peer-review procedures of biomedical journals.

IO Explain how to appraise drug information for the expertise and reputation of the author(s).

OBJ E6.1.9 (Evaluation) When presented with limited evidence-based biomedical literature, synthesize a reasonable response for the specific drug information need.

OBJ E6.1.10 (Evaluation) Appraise information provided by a pharmaceutical manufacturer.

OBJ E6.1.11 (Synthesis) Prepare an expert response to a complex drug information need.

IO Explain standards of care applicable to a specific drug information need.

IO Explain a standardized process for documenting, storing, and retrieving drug information responses.

Goal E6.2 Assist the organization in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the use of medications (e.g., The Joint Commission requirements; ASHP standards, statements, and guidelines; Center for Medicare and Medicaid Services; state and federal laws regulating pharmacy practice; OSHA regulations).

OBJ E6.2.1 (Synthesis) Participate in the design a strategy that would improve the organization's compliance with legal, regulatory, and safety requirements related to the use of medications used in the care of patients with cardiovascular disease.

OBJ E6.2.2 (Synthesis) Participate in the implementation of a strategy that would improve the organization's compliance with legal, regulatory, and safety requirements related to the use of medications used in the care of patients with cardiovascular disease.

Outcome E7: Demonstrate additional training and educational skills.

Goal E7.1 Prepare and deliver effective poster presentations.

OBJ E7.1.1 (Synthesis) Design an effective poster for the presentation of a specific topic.

IO Explain the types of content that should be included in a poster.

IO Explain the rules for visual presentation of poster material.

IO Explain resources that can be used to generate poster materials.

OBJ E7.1.2 (Synthesis) Exercise skill in responding to questions occurring during the presentation of a poster.

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The effective date for implementation of these educational outcomes, goals and objectives is commencing with the entering resident class of 2009.

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 following areas of emphasis (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):

- Acid/base disorders
- Acute and chronic cerebrovascular disease
- Acute aortic dissection
- Acute coronary syndromes
- Acute decompensated heart failure/cardiogenic shock
- Advanced cardiac life support
- Anticoagulation and related thrombotic disorders
- Atherosclerosis
- Atrial/ventricular arrhythmias
- Cardiac transplantation
- Cardiomyopathies
- Cardiovascular risk reduction (healthy lifestyle)
- Cardiovascular testing
- Chronic coronary artery disease
- Chronic heart failure
- Device therapy
 - a. Pacemakers
 - b. ICDs
 - c. LVADs
 - d. TAH
 - e. Balloon pump
 - f. Intravascular hemodynamic monitoring devices
- Drug-induced cardiovascular disease
- Dyslipidemia
- Hypertension
- Hypertensive urgency/emergencies
- Infective endocarditis
- Pericarditis/tamponade
- Peripheral arterial (atherosclerotic) disease
- Pulmonary hypertension
- Revascularization therapy
- Smoking cessation
- Valvular heart disease
- Venous thromboembolic disease

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.

Appendix F-2

ACCP Guidelines for Clinical Research Fellowship Training Programs

ACCP Guidelines for Clinical Research Fellowship Training Programs

Definition

A research fellowship is a directed, highly individualized, postgraduate training program designed to prepare the participant to function as an independent investigator.

Introduction

The purpose of fellowship training programs is to develop competency and expertise in the scientific research process, including hypothesis generation and development, study design, protocol development, grantsmanship, study coordination, data collection, analysis, and interpretation, technical skills development, presentation of results, and manuscript preparation and publication. A fellowship candidate is expected to possess appropriate practice skills relevant to the knowledge area of the fellowship. Such skills may be obtained through prior practice experience or completion of a residency program.

Under the close direction, instruction and supervision of a qualified investigator-preceptor, the fellow receives a highly individualized learning experience, utilizing the fellow's research interests and knowledge needs as a focus for his/her education and training. Fellowships are typically offered through schools/colleges of pharmacy, academic health centers, the pharmaceutical industry, and/or specialized care institutions. A fellowship graduate should be capable of conducting independent and collaborative research and functioning as principal investigator.

Training Program Requirements

1. A minimum of 3,000 hours of the fellowship training time should be devoted to research-related activities over a minimum period of two years.
2. Administrative institutional support for the preceptor's research program and the fellowship training program.
3. Availability of advanced educational opportunities (e.g., graduate level coursework) in research-related topics. Such coursework may include, but is not limited to, courses in research design and methods, biostatistics, ethical issues, pharmacokinetics, pharmacodynamics, pharmacoeconomics, and others as appropriate to the specific fellow and program.
4. Availability of appropriate facilities (e.g., laboratory and/or clinical) to conduct research.
5. Availability of qualified personnel to teach clinical, laboratory, and/or computer technology-based research skills.
6. Ready access to scientific literature and computer facilities.

Preceptor Qualifications

1. A clinical scientist with an established and on-going record of independent research accomplishments and expertise in the area of specialization related to the fellowship, which may be exemplified by:
 - a. fellowship training, a graduate degree, and/or equivalent experience;
 - b. principal or primary investigator on research grants and/or projects; and
 - c. published research papers in peer-reviewed scientific literature on which the preceptor is the primary or senior author.
2. Active collaborative research relationships with other scientists.

Fellowship Applicant Criteria

1. Masters or doctoral degree in a health science discipline required
2. Residency or equivalent clinical experience preferred.
3. Demonstrated interest in or an aptitude for a career in research.

Fellowship Experiences

Ideally, a research fellow should initiate and complete at least one original research project. However, it is recognized that this may not be possible in every case. Whether through the completion of one project from start to finish or through participation in multiple projects, the fellow should obtain extensive experience in:

1. Development of at least one scientific hypothesis
2. Development of experimental methods to test the developed hypothesis.
3. Preparation of a protocol and submission of the protocol to the appropriate institutional review committee.
4. Grantsmanship, including identification of appropriate funding sources for specific projects and the preparation and submission of a grant for extramural funding consideration.
5. Study design and coordination and data collection.
6. Statistical analysis of data.
7. Data analysis and interpretation
8. Development of clinical, laboratory, and/or computer-based research skills as appropriate to the specific training program
9. Abstract preparation and submission
10. Presentation of research at peer-reviewed scientific meetings
11. Manuscript preparation and submission for publication in peer-reviewed journals.
12. Participation in journal clubs, research workshops, and/or seminar series.
13. Instruction in biomedical science ethics.

Approved by the ACCP Board of Regents, October 22, 2004

Appendix G-1

Cardiology Pharmacy Bibliography

Appendix G-1 Cardiology Bibliography

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Appendix G-2

Annotated Literature Review

APPENDIX G-2
Annotated Literature Review
Cardiology Pharmacy Specialists

Citation	Summary	Conclusion	Relevance to BPS Petition
<p>Zhai XB, Gu ZC, Liu XY. Effectiveness of the clinical pharmacist in reducing mortality in hospitalized cardiac patients: a propensity score-matched analysis. <i>Ther Clin Risk Manag.</i> 2016;12:241-250.</p>	<p>This comparative study evaluated the impact of the clinical pharmacist as a direct patient-care team member on the mortality of all patients admitted to the cardiology unit. The clinical pharmacist in the study group suggested a total of 1,541 interventions, with 92% of these recommendations accepted by the cardiology team.</p>	<p>Drug related problems (DRPs) that were suspected to cause or contribute to a fatal outcome were determined by the clinical pharmacist service for patients hospitalized in a cardiology ward. Correction of these DRPs, upon pharmacists' advice, resulted in a significant decrease in mortality as analyzed by propensity score matching.</p>	<p>This publication describes clinical activities that resulted in a decrease in mortality for patients hospitalized in a cardiology ward. This article provides evidence to support Criterion A.</p>
<p>Tsuyuki RT, Al Hamarneh YN, Jones CA, Hemmelgarn BR. The effectiveness of pharmacist interventions on cardiovascular risk: the multicenter randomized controlled RxEACH trial. <i>J Am Coll Cardiol.</i> 2016;67(24):2846-2854.</p>	<p>This randomized trial conducted in 56 community pharmacies evaluated the effectiveness of a community pharmacy-based case finding and intervention on cardiovascular risk. 723 patients were randomized to usual care or an intervention group. The intervention consisted of an MTM review and cardiovascular disease (CVD) risk assessment and education.</p>	<p>The RxEACH study demonstrated that pharmacists with an advanced scope of practice could identify patients with poorly controlled risk factors and significantly reduce their risk for cardiovascular events. The intervention group showed a 21% reduction in risk for CVD events and showed a greater improvement in low-density lipoprotein cholesterol, systolic blood pressure, glycosylated hemoglobin, and smoking cessation.</p>	<p>This randomized trial describes the clinical outcomes for pharmacist interventions on cardiovascular risk. This article provides evidence to support Criterion A.</p>

<p>The Joint Commission. Core measure sets: venous thromboembolism. https://www.jointcommission.org/venous_thromboembolism/. Accessed April 11, 2016.</p>	<p>The venous thromboembolism (VTE) measures were developed as a result of the 'National Consensus Standards for the Prevention and Care of Deep Vein Thrombosis (DVT) project between The Joint Commission and the National Quality Forum (NQF). Six VTE measures were originally endorsed by the NQF in May 2008 and aligned with the Centers for Medicare & Medicaid Services. In 2012, the six VTE measures were re-engineered into electronic quality measures (eCQM).</p>	<p><i>The Specifications Manual for the National Hospital Inpatient Quality Measures</i> represents the result of efforts by the Centers for Medicare & Medicaid Services and the Joint Commission to achieve identity among common national hospital performance measures and to share a single set of common documentation.</p>	<p>The VTE Core Measure Sets represents the national consensus standards and provides evidence to support Criterion A.</p>
<p>Dixon DL, Dunn SP, Kelly MS, et al. Effectiveness of pharmacist-led amiodarone monitoring services on improving adherence to amiodarone monitoring recommendations: a systematic review. <i>Pharmacotherapy</i>. 2016;36(2):230-236.</p>	<p>Since 2000, clinicians have been advised to follow amiodarone monitoring guidelines provided by the Heart Rhythm Society. Adherence to these recommendations is suboptimal. This qualitative review details the evidence supporting the role of pharmacist-led amiodarone monitoring services (AMS) in improving adherence to amiodarone monitoring guidelines and identifying adverse effects. Five studies were identified, and overall, these programs had a</p>	<p>Pharmacists play a major role in ensuring the safe and effective use of medications, particularly high-risk medications such as amiodarone. Available studies suggest that pharmacist-led AMS may improve adherence to recommended monitoring guidelines and identification of amiodarone-related adverse effects.</p>	<p>This manuscript describes the clinical evidence for pharmacist-led amiodarone monitoring services. This article provides evidence to support Criterion A.</p>

	favorable impact on improving adherence to guideline recommended monitoring standards for amiodarone.		
Bell SP, Schnipper JL, Goggins K, et al. Effect of Pharmacist Counseling Intervention on Health Care Utilization Following Hospital Discharge: A Randomized Control Trial. <i>J Gen Intern Med.</i> 2016 May;31(5):470-477.	This randomized controlled trial determined the effect of a tailored, pharmacist-delivered, health literacy intervention on unplanned health care utilization, including hospital readmission or emergency room visit following discharge on 851 patients.	The pharmacist intervention did not reduce post-discharge, unplanned health care utilization overall but was effective for patients with inadequate health literacy.	This randomized trial describes the benefit of an intervention for patients with inadequate health literacy. This article provides evidence to support Criterion A.
Tsuyuki RT, Houle SK, Charrois TL, et al. Randomized trial of the effect of pharmacist prescribing on improving blood pressure in the community: the Alberta clinical trial in optimizing hypertension (RxACTION). <i>Circulation.</i> 2015;132(2):93-100.	This randomized controlled trial enrolled 248 patients to study the impact of pharmacist prescribing on blood pressure control in community-dwelling patients. Intervention group patients received an assessment of BP and cardiovascular risk, education on hypertension, prescribing of antihypertensive medications, laboratory monitoring, and monthly follow-up visits for 6-months from a pharmacist.	Pharmacist prescribing for patients with hypertension resulted in a clinically important and statistically significant reduction in blood pressure.	This randomized trial describes the benefit of pharmacist intervention for patients with hypertension in the community setting. This article provides evidence to support Criterion A.
Polgreen LA, Han J, Carter BL, et al. Cost-Effectiveness of a Physician-Pharmacist Collaboration Intervention to Improve Blood Pressure Control. <i>Hypertension.</i> 2015	This study evaluated the cost-effectiveness of a physician-pharmacist collaboration to improve blood pressure control for 625 patients, including low-income and	This study demonstrated the low cost of expanding a pharmacist-physician collaborative hypertension intervention. The results highlight the cost-effectiveness	This publication outlined the clinical and economic benefits of a pharmacist-physician collaboration to improve blood pressure control. The analysis provides evidence to support

<p>Dec;66(6):1145-1151.</p>	<p>minority populations. At 9-months, average systolic blood pressure decreased, and the percentage of patients with controlled hypertension was 43% in the intervention group and 34% in the control group. Total costs were lower for the intervention group than for the control group.</p>	<p>of clinical pharmacists in primary care settings when increased attention is being focused on value-based care.</p>	<p>Criterion A.</p>
<p>Dunn SP, Birtcher KK, Beavers CJ, et al. The role of the clinical pharmacist in the care of patients with cardiovascular disease. <i>J Am Coll Cardiol.</i> 2015;66(19):2129-2139.</p>	<p>This paper provides background information on clinical pharmacists' education, training, credentialing, and practice models in a variety of settings. It also discusses collaborative practice opportunities for integrating clinical pharmacists into a team-based care model.</p>	<p>Clinical pharmacists, through their unique training and practice focused on medication use, are positioned to serve an important role for patients on the cardiovascular care team.</p> <p>Multidisciplinary organizations, including the ACC, should support efforts to overcome legislative and compensation barriers so that pharmacists may be included in health care delivery models that allow full use of their education and training to provide high-quality patient care.</p>	<p>This article outlines the contributions of cardiology pharmacists, describes models of care, and the training and credentialing of pharmacists engaged in this practice. The analysis provides evidence to support Criterion A and Criterion F.</p>
<p>Brush JE Jr, Handberg EM, Biga C, et al. 2015 ACC Health Policy Statement on Cardiovascular Team-Based Care and the Role of Advanced Practice Providers. <i>J Am Coll Cardiol.</i> 2015 May 19;65(19):2118-</p>	<p>The ACC has a long-standing commitment to the concept of cardiovascular team-based care. For decades, our members have worked collaboratively within multidisciplinary teams that</p>	<p>This position paper specifically addresses the policy of the ACC on cardiovascular team-based care as it relates to the contributions of APPs.</p>	<p>This statement encourages the exploration of collaborative care models that should enable team members to optimize their education, training, experience, and talent. Improved team leadership,</p>

2136.	include cardiovascular nurses, technologists, cardiac surgeons, primary care physicians, and other specialists. More recently, we have seen the emergence of a group of team members that we will refer to collectively as advanced practice providers (APPs). This group includes advanced practice registered nurses (APRNs), physician assistants (PAs), and pharmacists (PharmDs).		coordination, collaboration, engagement, and efficiency will enable the delivery of higher-value care to the betterment of our patients and society. This article provides evidence to support Criterion A and Criterion B.
Warden BA, Freels JP, Furuno JP, Mackay J. Pharmacy-managed program for providing education and discharge instructions for patients with heart failure. <i>Am J Health Syst Pharm.</i> 2014;71(2):134-139.	This before-and-after quasiexperimental study evaluated the impact of a pharmacy managed program for providing education and discharge instructions for 35 patients with heart failure. Throughout patients' hospitalization, the pharmacist collaborated with the multidisciplinary team to make treatment and monitoring recommendations, provided discharge medication reconciliation, discharge medication recommendations, and discharge instructions. Pharmacists also answered patient-specific questions and gave the patient a complete discharge medication list.	Pharmacist involvement in medication reconciliation and discharge counseling for heart failure patients was associated with a significant increase in adherence with the Joint Commission's core measures, a significant reduction in 30-day all-cause readmissions, and a positive effect on patient satisfaction.	This article describes the clinical and humanistic outcomes for a pharmacist in improving care for heart failure patients upon discharge from the hospital. This article provides evidence to support Criterion A.

<p>Stewart K, George J, McNamara KP, et al. A multifaceted pharmacist intervention to improve antihypertensive adherence: a cluster-randomized, controlled trial (HAPPY trial). <i>J Clin Pharm Ther.</i> 2014;39(5):527-534.</p>	<p>This prospective, non-blinded, cluster-randomized controlled trial evaluated a community pharmacist intervention to improve adherence with antihypertensive medicines to improve blood pressure control. The primary outcome measure was the change in proportion of self-reported medication adherence. Secondary outcomes were changes in patient blood pressure.</p>	<p>This community pharmacist intervention resulted in improved adherence to antihypertensive medication and reduced systolic blood pressure.</p>	<p>This article describes the clinical outcomes for a pharmacist intervention aimed at improving blood pressure control and adherence. This article provides evidence to support Criterion A.</p>
<p>Santschi V, Chiolero A, Colosimo AL, et al. Improving blood pressure control through pharmacist interventions: a meta-analysis of randomized controlled trials. <i>J Am Heart Assoc.</i> 2014;3(2):e000718.</p>	<p>Updating and combining data from two previous systematic reviews, the authors assess the effect of pharmacist interventions on blood pressure (BP) and identify potential determinants of heterogeneity. Thirty-nine randomized controlled trials were included with 14,224 patients. Pharmacist interventions included patient education, feedback to physician, and medication management.</p>	<p>Pharmacist interventions – alone or in collaboration with other health care professionals – improved BP management. Compared with usual care, pharmacist interventions showed greater reduction in systolic and diastolic BP. The effect tended to be larger if the intervention was led by the pharmacist and was done at least monthly. Determinants of heterogeneity could not be identified.</p>	<p>This review describes the clinical evidence demonstrating pharmacist interventions improve blood pressure control. This article provides evidence to support Criterion A.</p>
<p>Ho PM, Lambert-Kerzner A, Carey EP, et al. Multifaceted intervention to improve medication adherence and secondary prevention</p>	<p>This study tested a multifaceted intervention (INT) to improve adherence to cardiac medications with 253 patients. The intervention</p>	<p>A multifaceted intervention comprising pharmacist-led medication reconciliation and tailoring, patient education, collaborative care between</p>	<p>This publication describes the clinical evidence demonstrating pharmacist interventions in improving adherence to cardiac</p>

<p>measures after acute coronary syndrome hospital discharge: a randomized clinical trial. <i>JAMA Intern Med.</i> 2014;174(2):186-193.</p>	<p>comprised (1) pharmacist-led medication reconciliation and tailoring; (2) patient education; (3) collaborative care between pharmacist and patient's primary care clinician and/or cardiologist; and (4) 2 types of voice messaging (educational and medication refill reminder calls).</p>	<p>pharmacist and patients' primary care clinician and/or cardiologist, and voice messaging increased adherence to medication regimens in the year after acute coronary syndrome hospital discharge without improving blood pressure and low-density lipoprotein cholesterol levels.</p>	<p>medications. This article provides evidence to support Criterion A.</p>
<p>Dorsch MP, Lose JM, DiDomenico RJ. The effect of cardiovascular credentialed pharmacists on process measures and outcomes in myocardial infarction and heart failure. <i>Pharmacotherapy.</i> 2014;34(8):803-808.</p>	<p>This study determined if institutions with inpatient cardiovascular credentialed pharmacists exhibited improved quality measures for acute myocardial infarction (AMI) and heart failure (HF) care compared with institutions without inpatient cardiovascular credentialed pharmacists. 34 Added Qualification in Cardiology (AQC) hospitals were matched to 102 non-AQC hospitals.</p>	<p>Hospitals with AQC pharmacists performed better on process of care measures than hospitals without AQC pharmacists. Hospitals that used inpatient AQC pharmacists performed better on process of care measures than hospitals that do not use inpatient AQC pharmacists.</p>	<p>This publication describes the clinical evidence demonstrating improved quality measures for AMI and HF in institutions with cardiovascular credentialed pharmacists. This article provides evidence to support Criterion A and Criterion F.</p>
<p>Bishop MA, Streiff MB, Ensor CR, et al. Pharmacist-managed international normalized ratio patient self-testing is associated with increased time in therapeutic range in patients with left ventricular assist devices at an academic medical</p>	<p>Patients with left ventricular assist devices (LVADs) are at an increased risk of bleeding and thrombotic complications, making warfarin therapy particularly challenging. This retrospective cohort study of 55 patients evaluated the</p>	<p>Pharmacist-managed INR PST was associated with an increased percentage of time in therapeutic range (%TTR) in patients with LVADs. There was no difference in the rate of per patient-year bleeding (0.23 vs. 0.33, p = 0.55) or thrombotic</p>	<p>This article describes the clinical outcomes for a pharmacist-managed INR PST. This article provides evidence to support Criterion A.</p>

<p>center. <i>ASAIO J.</i> 2014;60(2):193-198.</p>	<p>effectiveness of pharmacist-managed International Normalized Ratio (INR) patient self-testing (PST) versus usual care in patients with LVADs at a single center.</p>	<p>events (0.12 vs. 0.13, p = 0.88).</p>	
<p>Anderegg SV, Wilkinson ST, Couldry RJ, et al. Effects of a hospital-wide pharmacy practice model change on readmission and return to emergency department rates. <i>Am J Health Syst Pharm.</i> 2014;71(17):1469-1479.</p>	<p>This study was an observational pre-post analysis that evaluated the impact of an innovative medication reconciliation and discharge education program on 30-day readmissions and emergency department (ED) visits among 3,316 study subjects.</p> <p>Pharmacy teams completed medication reconciliation in 95.8% of cases at admission and 69.7% of cases at discharge. Discharge education was provided to 73.5% of high-risk patients (defined as those receiving anticoagulation therapy or treatment for acute myocardial infarction, chronic obstructive pulmonary disease, congestive heart failure, or pneumonia).</p>	<p>In the high-risk subgroup, there was a significant reduction in the 30-day rate of hospital readmissions, which declined from 17.8% to 12.3% (p=0.042); cost projections indicated that this reduction in readmissions could yield annual direct cost savings of more than \$780,000.</p> <p>Implementation of a team-based pharmacy practice model resulted in a significant decrease in the rate of 30-day readmissions for high-risk patients. Associated pharmacist interventions were estimated to yield annualized direct cost savings of \$783,450 and total cost savings of \$1,121,850.</p>	<p>This article describes the clinical and economic outcomes for a pharmacist-managed medication reconciliation and discharge education program on 30-day readmissions and ED visits. This article provides evidence to support Criterion A.</p>
<p>Writing Committee Members, Yancy CW, Jessup M, et al. 2013 ACCF/AHA guideline for the management of heart failure: a report of the</p>	<p>The medical profession should play a central role in evaluating the evidence related to drugs, devices, and procedures for the detection, management,</p>	<p>These guidelines provide clinicians with a representative evidence base, including the absolute risk difference and number needed to treat or</p>	<p>These guidelines provide the basis for clinical pharmacists caring for patients with heart failure. This article provides evidence to support Criterion</p>

<p>American College of Cardiology Foundation/American Heart Association Task Force on practice guidelines. <i>Circulation</i>. 2013;128(16):e240-327.</p>	<p>and prevention of disease. When properly applied, expert analysis of available data on the benefits and risks of these therapies and procedures can improve the quality of care, optimize patient outcomes, and favorably affect costs by focusing resources on the most effective strategies. An organized and directed approach to a thorough review of evidence has resulted in the production of clinical practice guidelines that assist clinicians in selecting the best management strategy for an individual patient. Moreover, clinical practice guidelines can provide a foundation for other applications, such as performance measures, appropriate use criteria, and both quality improvement and clinical decision support tools.</p>	<p>harm, along with confidence intervals and data related to the relative treatment effects such as odds ratio, relative risk, hazard ratio, and incidence rate ratio.</p>	<p>A.</p>
<p>Wiggins BS, Rodgers JE, DiDomenico RJ, et al. Discharge counseling for patients with heart failure or myocardial infarction: a best practices model developed by members of the American College of Clinical Pharmacy's Cardiology Practice and Research Network based on the Hospital to Home</p>	<p>Hospital to Home is a quality-based initiative led by the American College of Cardiology and the Institute for Healthcare Improvement, aimed at reducing 30-day hospital readmission rates for patients with heart failure or myocardial infarction. Several factors have been shown to</p>	<p>This best practice statement summarizes key components of discharge counseling for patients with heart failure or myocardial infarction, including medication use, medication dose and frequency, drug interactions, medications to avoid, common adverse effects, role of the medication</p>	<p>This article describes the key components of discharge counseling for patients with heart failure or myocardial infarction and the critical role that pharmacists play. This article provides evidence to support Criterion A.</p>

<p>(H2H) Initiative. <i>Pharmacotherapy</i>. 2013;33(5):558-580.</p>	<p>attribute to early readmission for these conditions, including comorbidities, environmental factors, insufficient discharge planning, lack of health literacy, and nonadherence to drug therapy. Pharmacists play a significant role in reducing readmissions by ensuring that appropriate evidence-based pharmacotherapy regimens have been prescribed during hospitalization; monitoring for drug duplications, medication errors, and adverse reactions; and performing medication reconciliation.</p>	<p>in the disease state, signs and symptoms of the disease, diet, the patient's role in self-care (lifestyle modifications), and when patients should seek medical advice. In order to accomplish the goal of reducing readmissions, health care providers must partner together across the continuum of care and include pharmacists as pivotal members of the health care team.</p>	
<p>Milfred-LaForest SK, Chow SL, DiDomenico RJ, et al. Clinical pharmacy services in heart failure: an opinion paper from the Heart Failure Society of America and American College of Clinical Pharmacy Cardiology Practice and Research Network. <i>Pharmacotherapy</i>. 2013;33(5):529-548.</p>	<p>This paper outlines potential roles for clinical pharmacists in a multidisciplinary heart failure (HF) team, to document outcomes associated with interventions by clinical pharmacists, to recommend minimum training for clinical pharmacists engaged in HF care, and to suggest financial strategies to support clinical pharmacy services within a multidisciplinary team. Although reports of outcomes from pharmacist interventions have been mixed owing to differences in study design, benefits, such as increased use</p>	<p>Clinical pharmacists participating in HF or heart transplant teams should have completed specialized postdoctoral training in the form of residencies and/or fellowships in cardiovascular and/or transplant pharmacotherapy, and board certification is recommended. Financial mechanisms to support pharmacist participation in the HF teams are variable. Positive outcomes associated with clinical pharmacist activities support the value of making this resource available to HF teams.</p>	<p>This opinion paper describes the potential roles and recommended training for clinical pharmacists engaged in the care of patients with HF. This article provides evidence to support Criterion A and Criterion F.</p>

	<p>of evidence-based therapies, decreases in HF hospitalizations and emergency department visits, and decreases in all-cause readmissions, have been demonstrated.</p>		
<p>Ip EJ, Shah BM, Yu J, et al. Enhancing diabetes care by adding a pharmacist to the primary care team. <i>Am J Health Syst Pharm.</i> 2013;70(10):877-886.</p>	<p>The impact of pharmacist interventions on short-term clinical markers and long-term cardiovascular risk in 147 patients with type 2 diabetes is investigated. During the 12-month study period, the mean glycosylated hemoglobin (HbA1c) value was decreased from 9.5% to 6.9% in the enhanced care group and from 9.3% to 8.4% in the control group; patients in the enhanced care group were significantly more likely to attain goals for HbA1c (odds ratio [OR], 3.9), low-density lipoprotein cholesterol (OR, 2.0), and blood pressure reduction (OR, 2.0) and three times more likely to attain all three goals (OR, 3.2). The estimated 10-year risk of coronary heart disease was decreased from 16.4% to 9.3% with enhanced care versus a reduction from 17.4% to 14.8% with usual care ($p < 0.001$).</p>	<p>The addition of a pharmacist to a health maintenance organization primary care team improved short-term surrogate markers as well as long-term cardiovascular risk in adult patients with type 2 diabetes.</p>	<p>This article describes the clinical outcomes provided by the addition of a pharmacist to the primary care team. This article provides evidence to support Criterion A.</p>

<p>Giberson SF. Million Hearts: pharmacist-delivered care to improve cardiovascular health. <i>Public Health Rep.</i> 2013;128(1):2-6.</p>	<p>More than two million people have a heart attack or stroke each year in the United States. More than 2,200 Americans die of cardiovascular disease (CVD) each day, representing an average of one death every 39 seconds. However, many of these deaths are preventable. Aiming to prevent one million heart attacks and strokes during a five-year period through appropriate aspirin therapy, blood pressure control, cholesterol management, and smoking cessation (ABCS), the Million Hearts campaign calls for a concerted effort in targeting cardiovascular health. Million Hearts has two primary goals: (1) to empower Americans to make healthy choices and (2) to improve care for people who need treatment. Because CVD prevention and care involve both the clinical and community realms, pharmacists are uniquely positioned to contribute to the Million Hearts campaign goals.</p>	<p>As the most accessible health care professionals in a community, pharmacists are trusted by patients and have the clinical training and the capacity to provide patient care throughout the continuum of chronic diseases, including prevention, chronic disease management, patient education, adherence counseling, and provider consultation. As essential members of the health care team, pharmacists in multiple practice settings function as health care providers to deliver patient care services, such as the ABCS for CVD.</p>	<p>Working in collaboration with other health care providers, pharmacist-delivered patient care continues to evolve and transform as the pharmacist's scope of practice expands to meet the nation's health care needs. This scope includes addressing the burden of CVD. This article provides evidence to support Criterion A and Criterion B.</p>
<p>Verret L, Couturier J, Rozon A, et. al. Impact of a pharmacist-led warfarin self-management</p>	<p>This randomized trial of 114 patients evaluated the impact of a pharmacist-led warfarin</p>	<p>A self-management warfarin program led by pharmacists resulted in significant</p>	<p>This trial describes the clinical outcomes for pharmacist provided education for</p>

<p>program on quality of life and anticoagulation control: a randomized trial. <i>Pharmacotherapy</i>. 2012;32(10):871-879.</p>	<p>patient self-management program on quality of life and anticoagulation control compared with management in a physician-led specialized anticoagulation clinic.</p>	<p>improvement in the quality of life of patients receiving warfarin therapy as well as a reduction in the time required for anticoagulation monitoring, while maintaining a level of anticoagulation control similar to a high-quality specialized anticoagulation clinic.</p>	<p>patients on warfarin therapy. This articles provides evidence to support Criterion A.</p>
<p>Noureldin M, Plake KS, Morrow DG, et al. Effect of health literacy on drug adherence in patients with heart failure. <i>Pharmacotherapy</i>. 2012;32(9):819-826.</p>	<p>This post hoc analysis of a randomized controlled trial assessed the effect of health literacy on drug adherence in the context of a pharmacist-based intervention for 314 patients with heart failure. Drug adherence was assessed over 9 months using electronic prescription container monitors on cardiovascular drugs. Health literacy was assessed using the Short Test of Functional Health Literacy in Adults.</p>	<p>In patients with heart failure, those with adequate health literacy have better adherence to cardiovascular drugs than those with inadequate health literacy. The pharmacist intervention improved adherence in patients with adequate and inadequate health literacy.</p>	<p>This article describes the results of a pharmacist intervention that improved medication adherence for patients with inadequate health literacy. This article provides evidence to support Criterion A.</p>
<p>Mahan CE, Hussein MA, Amin AN, Spyropoulos AC. Venous thromboembolism pharmacy intervention management program with an active, multifaceted approach reduces preventable venous thromboembolism and increases appropriate prophylaxis. <i>Clin Appl Thromb</i></p>	<p>This manuscript evaluated whether a human alert, as part of a pharmacy intervention program, can increase appropriate prophylaxis and decrease preventable symptomatic VTE in hospitalized patients. This prospective study with retrospective data collection</p>	<p>A pharmacy-led, multifaceted intervention can significantly increase the rates of appropriate prophylaxis and significantly reduce the incidence of preventable venous thromboembolism (VTE) in hospitalized patients.</p>	<p>This article describes the clinical outcomes from a pharmacy intervention to decrease preventable symptomatic VTE in hospitalized patients. This article provides evidence to support Criterion A.</p>

<p><i>Hemost.</i> 2012;18(1):45-58.</p>	<p>was conducted utilizing data from 1,879 patients in a control cohort and 1,646 patients in the intervention cohort. The rate of appropriate prophylaxis increased from 23.8% to 37.9%. Preventable VTE incidence was reduced by 74% from 18.6 to 4.9 per 1,000 patients.</p>		
<p>Ladhani NN, Majumdar SR, Johnson JA, et al. Adding pharmacists to primary care teams reduces predicted long-term risk of cardiovascular events in type 2 diabetic patients without established cardiovascular disease: results from a randomized trial. <i>Diabet Med.</i> 2012;29(11):1433-1439.</p>	<p>This pre-specified secondary analysis of randomized trial data determined the impact of adding pharmacists to primary care teams on predicted 10-year risk of cardiovascular events in patients with type 2 diabetes without established cardiovascular disease. The main study found that, compared with usual care, addition of a pharmacist resulted in improvements in blood pressure, dyslipidemia, and hyperglycemia for primary care patients with type 2 diabetes.</p>	<p>Adding pharmacists to primary care teams for 1 year significantly reduced the predicted 10-year risk of cardiovascular events for patients with Type 2 diabetes without established cardiovascular disease.</p>	<p>This article describes risk reduction for cardiovascular events for patients when a pharmacist was added to the primary care team. This article provides evidence to support Criterion A.</p>
<p>Fletcher GF, Berra K, Fletcher BJ, et al. The integrated team approach to the care of the patient with cardiovascular disease. <i>Curr Probl Cardiol.</i> 2012;37(9):369-397.</p>	<p>This paper outlines and provides specific examples of team-based care as it applies to the care of patients with cardiovascular disease (CVD). Pharmacists are included as part of the clinical practice</p>	<p>It is imperative that health care providers continue to research and implement efficient and cost-effective integrated team-based care. The details provided within the document provide practical information</p>	<p>This article outlined the role and contribution of pharmacists within team-based care for patients with CVD. This review article provides evidence to support Criterion A and Criterion B.</p>

	<p>team within the suggested model of care. Pharmacists play an important role in medication management, adherence, titration, and disease management programs.</p>	<p>to effectively implement the integrated team approach in the care of patients with CVD.</p>	
<p>Santschi V, Chiolero A, Burnand B, et al. Impact of pharmacist care in the management of cardiovascular disease risk factors. <i>Arch Intern Med.</i> 2011;171(16):1441-1453.</p>	<p>This systematic review and meta-analysis of randomized trials determined the impact of pharmacist care on the management of cardiovascular disease (CVD) risk factors among outpatients. Thirty randomized controlled trials, which included 11,765 patients, were identified. The types of interventions documented included patient educational interventions, patient-reminder systems, measurement of CVD risk factors, medication management and feedback to physician, or educational intervention to health care professionals.</p>	<p>Pharmacist-directed care or care in collaboration with physicians or nurses improve the management of CVD risk factors in outpatients. Pharmacist care was associated with significant reductions in systolic/diastolic blood pressure, total cholesterol, low-density lipoprotein, and a reduction in the risk of smoking.</p>	<p>This analysis outlined the multiple roles of pharmacists in caring for patients with cardiovascular risk in the outpatient setting. The clinical outcomes of these interventions are also outlined. This review article provides evidence to support both Criterion A and Criterion B.</p>
<p>Morgado MP, Morgado SR, Mendes LC, et al. Pharmacist interventions to enhance blood pressure control and adherence to antihypertensive therapy: review and meta-analysis. <i>Am J Health Syst</i></p>	<p>The article reviewed pharmacist interventions to enhance blood pressure control and adherence to antihypertensive therapy in adults with essential hypertension. A total of 15</p>	<p>Pharmacist interventions can significantly improve medication adherence, systolic blood pressure, diastolic blood pressure, and blood pressure control in patients with essential hypertension.</p>	<p>This article outlined the success of pharmacists in caring for patients with essential hypertension. This review article provides evidence to support Criterion A.</p>

<p><i>Pharm.</i> 2011;68(3):241-253.</p>	<p>studies were identified, testing 16 different interventions and containing data on 3,280 enrolled patients.</p>	<p>Interventions were complex and multifaceted and included medication management in all studies.</p>	
<p>Hall DH, Buchanan J, Helms B, et. al. Health care expenditures and therapeutic outcomes of a pharmacist-managed anticoagulation service versus usual medical care. <i>Pharmacotherapy.</i> 2011;31(7)686-694.</p>	<p>This retrospective, matched-cohort study of 350 patients evaluated the differences in health care expenditures and therapeutic outcomes of patients receiving warfarin therapy management by a pharmacist-managed anticoagulation service compared with those receiving warfarin management by usual medical care.</p>	<p>Pharmacist-managed anticoagulation leads to reduced health care expenditure while improving therapeutic outcomes compared with usual medical care.</p>	<p>This manuscript describes the economic and clinical benefits of warfarin therapy management. This study provides evidence to support Criterion A.</p>
<p>Ensor CR, Paciullo CA, Cahoon WD Jr, Nolan PE Jr. Pharmacotherapy for mechanical circulatory support: a comprehensive review. <i>Ann Pharmacother.</i> 2011;45(1):60-77.</p>	<p>This manuscript provides a comprehensive review of the pharmacotherapy associated with the provision of mechanical circulatory support (MCS) to patients with end-stage heart failure and guidance regarding the selection, assessment, and optimization of drug therapy for this population.</p>	<p>The HeartMate II clinical investigators called for involvement of pharmacists in MCS patient assessment and optimization. Pharmacotherapeutic management of patients supported with MCS devices requires individualized care, with pharmacists as part of the team, based on the characteristics of each pump and recipient.</p>	<p>This analysis outlined the significant roles of the clinical pharmacist in the use of MCS devices through direct patient care, protocol development, research activities, and education of patients and providers. This review article provides evidence to support both Criterion A and Criterion B.</p>
<p>Weber CA, Ernst ME, Sezate GS, et al. Pharmacist-physician comanagement of hypertension and reduction in</p>	<p>This prospective, cluster-randomized controlled clinical trial with 179 patients demonstrated that a</p>	<p>Pharmacist-physician collaborative management of hypertension achieved consistent and significantly</p>	<p>This article outlined the success of pharmacists partnering with physicians to improve care of patients with</p>

<p>24-hour ambulatory blood pressures. Arch Intern Med. 2010;170(18):1634-1639.</p>	<p>pharmacist-physician co-management model for patients with hypertension improves outcomes.</p>	<p>greater reduction in 24-hour blood pressure (BP) and a high rate of BP control.</p>	<p>hypertension. This article provides evidence to support Criterion A.</p>
<p>Rudd KM and Dier JG. Comparison of two different models of anticoagulation management services with usual medical care. <i>Pharmacotherapy</i>. 2010; 30(4):330-338.</p>	<p>This retrospective medical record review of 996 patients evaluated the safety and economic impact of three models of anticoagulation management services: usual medical care, a nurse-managed service, and a pharmacist-managed service.</p>	<p>Pharmacist-managed anticoagulation management services reduced the rates of anticoagulation-related emergency department visits and hospitalizations, with significant financial impact. The pharmacist-managed service yielded the lowest rates of hospitalization and emergency department visits, with hospitalizations reduced by 56% versus nurse-managed service and 61% versus usual care (p<0.01). Emergency department visits were reduced by 78% in both the nurse-managed and usual care models (p<0.002).</p>	<p>This retrospective review describes the clinical and economical benefits of pharmacist-managed anticoagulation services. This articles provides evidence to support Criterion A.</p>
<p>Costanzo MR, Dipchand A, Starling R, et al. International Society of Heart and Lung Transplantation Guidelines. The International Society of Heart and Lung Transplantation Guidelines for the care of heart transplant recipients. <i>J Heart Lung Transplant</i>. 2010 Aug;29(8):914-956.</p>	<p>The International Society for Heart and Lung Transplantation (ISHLT) has made an unprecedented commitment to convene experts in all areas of heart transplantation to develop practice guidelines for the care of heart transplant recipients. After a vast effort involving 40 writers from 9 countries</p>	<p>These guidelines specifically indicate that transplant centers should strive to have specialty-trained pharmacists or physicians with expertise in pharmacology as part of the multidisciplinary team. In addition, the guidelines state that integration of input from pharmacists and infectious disease specialists is important</p>	<p>These guidelines provide the basis for clinical pharmacists caring for heart transplant patients. This article provides evidence to support Criterion A.</p>

	worldwide, the ISHLT Guidelines for the Care of Heart Transplant Recipients have now been completed.	during the development of treatment protocols for heart transplant recipients.	
Chisholm-Burns MA, Lee JK, Spivey CA, et. al. US pharmacists' effect as team members on patient care. <i>Med Care</i> . 2010; 48(10):923-933.	A comprehensive systematic review with focused meta-analyses of 56,573 citations was conducted to examine the effects of pharmacist-provided direct patient care on therapeutic, safety, and humanistic outcomes.	Favorable results were found in therapeutic and safety outcomes, and meta-analyses conducted for hemoglobin A1c, LDL cholesterol, blood pressure, and adverse drug events were significant ($P < 0.05$), favoring pharmacists' direct patient care over comparative services. Results for humanistic outcomes were favorable with variability. Medication adherence, patient knowledge, and quality of life-general health meta-analyses were significant ($P < 0.05$), favoring pharmacists' direct patient care. The authors concluded that incorporating pharmacists as health care team members in direct patient care is a viable solution to help improve U.S. health care.	This review and meta-analysis demonstrates that pharmacist care improved clinical outcomes for patients with cardiovascular disease risk factors. This article provides evidence to support Criterion A.
Snider M, Kalbfleisch S, Carnes C. Initial experience with antiarrhythmic medication monitoring by clinical pharmacists in an outpatient	This retrospective chart review of 134 patients was conducted to monitor antiarrhythmic drug therapy to improve the continuity and consistency of	Pharmacist monitoring of outpatient antiarrhythmic medication therapy appeared to improve patient adherence to recommended testing	This publication details how pharmacist monitoring improved adherence to recommended testing protocols and identification of

<p>setting: a retrospective review. <i>Clin Ther.</i> 2009;31(6):1209-1218.</p>	<p>care for patients receiving class I or class III antiarrhythmic drugs. Antiarrhythmic medication monitoring protocols were developed for a pharmacy-based outpatient clinic by a collaborative effort between pharmacists, physicians, and nurses.</p>	<p>protocols and helped to identify adverse events and clinically significant drug interactions. At enrollment, 59% of patients had completed all recommended laboratory and objective testing. After follow-up visits, 100% of patients were current with testing.</p>	<p>adverse events and clinically significant drug interactions for patients taking certain antiarrhythmic medications. This article provides evidence to support Criterion A.</p>
<p>Murray MD, Ritchey ME, Wu J, Tu W. Effect of a pharmacist on adverse drug events and medication errors in outpatients with cardiovascular disease. <i>Arch Intern Med.</i> 2009;169(8):757-763.</p>	<p>This publication detailed the results of a pooled analysis of 2 randomized controlled trials to determine the effect of pharmacist intervention on adverse drug events and medication errors in 800 total patients. Compared with the control group, the risk of any event was 34% lower in the intervention group, including a lower risk of adverse drug events, preventable adverse drug events, potential adverse drug events, and medication errors.</p>	<p>Pharmacist intervention to improve medication use in outpatients with cardiovascular disease decreases the risk of adverse drug events and medication errors.</p>	<p>This article outlines how pharmacist monitoring decreased adverse drug events and medication errors in patients with CVD. This article provides evidence to support Criterion A.</p>
<p>McLean DL, McAlister FA, Johnson JA, et al. A randomized trial of the effect of community pharmacist and nurse care on improving blood pressure management in patients with diabetes mellitus: study of cardiovascular risk</p>	<p>This randomized controlled trial in 14 community pharmacies determined the efficacy of community-based, multidisciplinary intervention on BP control in patients with diabetes mellitus. A total of 227 patients were randomized</p>	<p><i>SCRIP-HTN</i> provides strong evidence that a community pharmacist and nurse team, working collaboratively with patients and primary care physicians, can have a major effect on hypertension management in patients with</p>	<p>This article describes the clinical outcomes for a pharmacist/nurse team in improving blood pressure control for patients with diabetes. This article provides evidence to support Criterion A.</p>

<p>intervention by pharmacists-hypertension (SCRIP-HTN). <i>Arch Intern Med.</i> 2008;168(21):2355-2361.</p>	<p>to intervention and control arms.</p>	<p>diabetes mellitus and suboptimal blood pressure (BP) control in the community. An extrapolation of these findings shows that a sustained 5-mm Hg reduction in systolic BP would be expected to reduce the long-term incidence of strokes by 30%, coronary events by 23%, and mortality by 13%.</p>	
<p>Koshman SL, Charrois TL, Simpson SH, et al. Pharmacist care of patients with heart failure: a systematic review of randomized trials. <i>Arch Intern Med.</i> 2008;168(7):687-694.</p>	<p>This publication clarifies the role of pharmacists in the care of patients with heart failure (HF) through a systematic review of 12 randomized controlled trials.</p>	<p>Pharmacist care in the treatment of patients with HF greatly reduces the risk of all-cause and HF hospitalizations. The authors conclude that since hospitalizations associated with HF are a major public health problem, the incorporation of pharmacists into HF care teams should be strongly considered.</p>	<p>This analysis outlined clinical benefits of pharmacist care for patients with heart failure. The article also specifically recommends the incorporation of pharmacists into HF care teams. This systematic review provides evidence to support both Criterion A and Criterion B.</p>
<p>Murray MD, Young J, Hoke S, et al. Pharmacist intervention to improve medication adherence in heart failure - a randomized trial. <i>Ann Intern Med.</i> 2007;146:714-725.</p>	<p>A randomized trial of 312 low-income patients with heart failure demonstrated that pharmacist intervention improves medication adherence and health outcomes compared with usual care. Primary outcomes were medication adherence and secondary outcomes included health-related quality of life, patient satisfaction with</p>	<p>Pharmacist intervention for outpatients with heart failure can improve adherence to cardiovascular medications and decrease health care use and costs. The study documented a 19.4% decrease in emergency department visits and hospital admissions, and annual direct health care costs were lower in the intervention group.</p>	<p>This publication outlined the clinical and economic benefits of pharmacist interventions for patients with heart failure. The analysis provides evidence to support Criterion A.</p>

	pharmacy services, and total direct costs.		
Merenich JA, Olson KL, Delate T, et al. Mortality reduction benefits of a comprehensive cardiac care program for patients with occlusive coronary artery disease. <i>Pharmacotherapy</i> . 2007;27(10):1370-1378.	This retrospective, longitudinal cohort study enrolled 4,896 patients with an incident occlusive coronary artery disease (CAD) event. The study determined the effect of early and sustained enrollment in a comprehensive cardiac care (CCC) program on all-cause mortality in patients with CAD. The CCC program is a collaborative effort between clinical pharmacy specialists and nurses and directed by a physician.	Compared with those not enrolled in the CCC program, patients enrolled in the early CCC were 89% less likely to die. The earlier the program started after a coronary event, the better the mortality reduction benefit.	This publication outlined the significant decrease in mortality for patients involved in the CCC program. The analysis provides evidence to support Criterion A.
Coons JC, Fera T. Multidisciplinary team for enhancing care for patients with acute myocardial infarction or heart failure. <i>Am J Health Syst Pharm</i> . 2007;64(12):1274-1278.	This publication describes pharmacists' involvement in a disease management program for the improvement of care of patients with acute myocardial infarction (MI) or heart failure (HF). Pharmacists provided medication evaluation and education for patients in an effort to augment adherence with Joint Commission core measures.	A multidisciplinary team, including pharmacists, improved Joint Commission core measures for hospitalized patients with MI or HF. For MI, a consistent improvement in performance to 100% was demonstrated for 4 of the 6 criteria.	This manuscript outlines pharmacists' participation in services for patients with MI and HF improved care as measures by Joint Commission core measures. The analysis provides evidence to support Criterion A and Criterion B.
Tsuyuki RT, Fradette M, Johnson JA, et al. A multicenter disease management program for hospitalized patients with	In a stage-2, multicenter trial, the effect of a disease management program on clinical and economic	A simple and practical in-hospital disease management program improved the utilization of angiotensin-	This publication outlined the clinical and economic benefits of pharmacist/nurse interventions for patients with

<p>heart failure. <i>J Card Fail.</i> 2004;10(6):473-480.</p>	<p>outcomes in patients with heart failure was assessed.</p>	<p>converting enzyme (ACE) inhibitors by almost 50% and also promoted usage of higher doses of ACE inhibitors. A 6-month patient education and support program for outpatients resulted in a cost reduction per patient for cardiovascular-related events.</p>	<p>heart failure. The analysis provides evidence to support Criterion A.</p>
<p>LaPointe NM, Jollis JG. Medication errors in hospitalized cardiovascular patients. <i>Arch Intern Med.</i> 2003;163(12):1461-1466.</p>	<p>This systematic review of the experience of a clinical pharmacist documented 14,983 pharmacist interventions. The study documented 24 medication errors per 100 admissions for cardiovascular patients.</p>	<p>The large and increasing numbers of potential adverse drug events identified through routine review by a clinical pharmacist strongly support the role of pharmacists in assuring public safety.</p>	<p>This review documented the clinical impact of a pharmacist in identifying and intervening to improve adverse drug events for cardiovascular patients. The analysis provides evidence to support Criterion A.</p>
<p>Gattis WA, Hasselblad V, Whellan DJ, O'Connor CM. Reduction in heart failure events by the addition of a clinical pharmacist to the heart failure management team. <i>Arch Intern Med.</i> 1999;159:1939-1945.</p>	<p>This publication details a multidisciplinary approach to improving outcomes by managing heart failure. 181 patients with heart failure and left ventricular dysfunction were randomized to an intervention or control group. Patients in the intervention group received clinical pharmacist evaluation, including medication evaluation, therapeutic recommendations to the attending physician, patient education, and follow-up telemonitoring. The primary</p>	<p>Outcomes in heart failure can be improved with a clinical pharmacist as a member of the multidisciplinary heart failure team. All-cause mortality and heart failure events were significantly lower in the intervention group, compared with the control group.</p>	<p>This publication outlined a decrease in mortality for patients with heart failure that received clinical pharmacist intervention. The data provides evidence to support Criterion A.</p>

	<p>endpoint was combined all-cause mortality and heart failure clinical events.</p>		
<p>Chiquette E, Amato MG, Bussey HI. Comparison of an anti-coagulation clinic with usual medical care: anticoagulation control, patient outcomes, and health care costs. <i>Arch Intern Med.</i> 1998;158:1641-1647.</p>	<p>This study compared newly anticoagulated patients who were treated with usual medical care with those treated at an anticoagulation clinic (AC) for patient characteristics, anticoagulation control, bleeding and thromboembolic events, and differences in cost for hospitalizations and emergency department visits.</p>	<p>A clinical pharmacist-run AC improved anticoagulation control, reduced bleeding and thromboembolic event rates, and saved \$162,058 per 100 patients annually in reduced hospitalizations and emergency department visits.</p>	<p>This publication outlined the clinical and economic benefits of pharmacist interventions for newly anticoagulated patients. The analysis provides evidence to support Criterion A.</p>

Appendix G-3

ACPE PLAN Programming Live Forum Knowledge Activity

Title	UAN	Hrs (CEUs)	City	Activity Type	Provider Description
"Oh, the rhythm of my heart is beating like a drum" A Case-based Study of Atrial Fibrillation	0837-9999-15-132-L01-P	1 (0.1)	Bangor	Knowledge	0837 - University of New England College of Pharmacy
#21 Hot Topics from Perinatal-Neonatal Literature	0263-0000-14-481-L01-P	0.75 (0.075)	Las Vegas	Knowledge	0263 - Contemporary Forums
: Nutritional supplements to reduce cardiovascular events – where is the evidence?	0106-9999-14-032-L01-P	1 (0.1)	Mashantucket, CT	Knowledge	0106 - Connecticut Pharmacists Association
"Thin is the New In - Review of the Novel Anticoagulants for Venous Thromboembolism"	0011-9999-15-012-L04-P	2 (0.2)	Panama/727.742.3543	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
10th Annual Heart Failure Symposium: Management of the Patient with Heart Failure	0062-9999-13-141-L01-P	6 (0.6)	Spartanburg (Summit Pointe)	Knowledge	0062 - South Carolina College of Pharmacy
11th Annual Heart Failure Symposium	0062-9999-14-106-L01-P	6.25 (0.625)	Spartanburg	Knowledge	0062 - South Carolina College of Pharmacy
12th Annual Cardiovascular Symposium: Session 1	0163-9999-16-025-L01-P	4 (0.4)	Sarasota	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
12th Annual Cardiovascular Symposium: Session 2	0163-9999-16-026-L01-P	4 (0.4)	Sarasota	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
12th Annual Cardiovascular Symposium: Session 3	0163-9999-16-027-L01-P	4 (0.4)	Sarasota	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
12th Annual Heart Failure Symposium: Management of the Patient with Heart Failure	0062-9999-15-101-L01-P	7 (0.7)	Spartanburg	Knowledge	0062 - South Carolina College of Pharmacy
12th National Conference on Anticoagulant Therapy, Day One	0060-9999-13-001-L01-P	4.25 (0.425)	Phoenix	Knowledge	0060 - University of Rhode Island College of Pharmacy
12th National Conference on Anticoagulant Therapy, Day Three	0060-9999-13-003-L01-P	3.75 (0.375)	Phoenix	Knowledge	0060 - University of Rhode Island College of Pharmacy
12th National Conference on Anticoagulant Therapy, Day Two	0060-9999-13-002-L01-P	5.25 (0.525)	Phoenix	Knowledge	0060 - University of Rhode Island College of Pharmacy
12th WCIRDC: Session 10	0102-9999-14-084-L01-P	1.75 (0.175)	Los Angeles	Knowledge	0102 - Minnesota Pharmacists Association

13th Annual UC Davis Clinical Pharmacotherapy Conference	0277-0000-14-003-L01-P	3.5 (0.35)	http://www.cme.ucdmc.ucdavis.edu	Knowledge	0277 - University of California Davis Health System Department of Pharmacy
13th Annual UC Davis Clinical Pharmacotherapy Conference	0277-0000-15-003-L01-P	3.5 (0.35)	http://www.cme.ucdavis.edu	Knowledge	0277 - University of California Davis Health System Department of Pharmacy
14th Annual Antithrombotic Therapy Symposium: Session I	0510-9999-13-004-L01-P	3.5 (0.35)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
14th Annual Antithrombotic Therapy Symposium: Session I	0510-9999-13-004-L01-P	3.5 (0.35)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
14th Annual Antithrombotic Therapy Symposium: Session II	0510-9999-13-005-L01-P	1.5 (0.15)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
14th Annual Antithrombotic Therapy Symposium: Session III	0510-9999-13-006-L01-P	1.5 (0.15)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
15th Annual Antithrombotic Therapy Symposium: Session I	0510-9999-14-011-L01-P	3.5 (0.35)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
15th Annual Antithrombotic Therapy Symposium: Session II	0510-9999-14-013-L01-P	1.5 (0.15)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
15th Annual Antithrombotic Therapy Symposium: Session III	0510-9999-14-014-L01-P	1.5 (0.15)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
16th Clinical Applications for Age Management Medicine	0347-9999-14-006-L01-P	270 (27)	Orlando, JW Marriott	Knowledge	0347 - Foundation for Care Management
2013 ACC/AHA Blood Cholesterol Guideline: Impact on the Current Practice	0837-9999-14-092-L01-P	1 (0.1)	Portland	Knowledge	0837 - University of New England College of Pharmacy
2013 ACC/AHA Cholesterol Guidelines: 1 Year Later	0256-0000-14-721-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
2013 ACCF/AHA Guidelines for the Management of Heart Failure	0165-0000-14-075-L01-P	1.5 (0.15)	Destin	Knowledge	0165 - Florida Pharmacy Association
2013 Anticoagulation Update	0112-0000-13-208-L01-P	1.5 (0.15)	Bellaire	Knowledge	0112 - Michigan Pharmacists Association

2013 Cardiometabolic Health Congress	0816-0000-13-036-L01-P	27.75 (2.775)	Boston	Knowledge	0816 - Medical Education Resources, Inc.
2013 Medical Seminar Series: Mastering the Protocols for Optimization of Hormone Replacement Therapy - Part II	0347-9999-13-010-L01-P	23.5 (2.35)	Plantation, Renaissance Plantation Hotel, 7:30 am	Knowledge	0347 - Foundation for Care Management
2014 Cardiometabolic Health Congress	0816-9999-14-002-L01-P	27.5 (2.75)	Boston, MA	Knowledge	0816 - Medical Education Resources, Inc.
2014 Consultant Program	0002-0000-14-031-L04-P	6 (0.6)	Birmingham	Knowledge	0002 - Samford University McWhorter School of Pharmacy
2014 Medical Seminar Series: Mastering the Protocols for Optimization of Hormone Replacement Therapy - Part I	0347-9999-14-002-L01-P	18.5 (1.85)	Salt Lake City, Salt Lake Marriott, 7:30 am	Knowledge	0347 - Foundation for Care Management
2014 Northern Michigan Pharmacy Education and Suppliers Seminar	0112-0000-14-206-L04-P	8 (0.8)	Bellaire	Knowledge	0112 - Michigan Pharmacists Association
2014 Update on A-Fib, Where Are We Headed?	0165-0000-14-087-L01-P	1.5 (0.15)	Ft. Lauderdale	Knowledge	0165 - Florida Pharmacy Association
2015 Fall Conference Pharmacology Elective Cholesterol Medications	0035-9999-15-017-L01-P	2.5 (0.25)	Boulder	Knowledge	0035 - Skaggs School of Pharmacy at the University of Montana
2015 Hemostatis and Thrombosis Research Society Symposium: General Conference Session II	0062-9999-15-004-L01-P	3.5 (0.35)	New Orleans	Knowledge	0062 - South Carolina College of Pharmacy
2015 Hemostatis and Thrombosis Research Society Symposium: Pre-Conference Session	0062-9999-15-002-L01-P	3 (0.3)	New Orleans	Knowledge	0062 - South Carolina College of Pharmacy
2015 Hemostatis and Thrombosis Research Society Symposium: Session I Thrombophilia Testing	0062-9999-15-003-L01-P	1.5 (0.15)	New Orleans	Knowledge	0062 - South Carolina College of Pharmacy
2015 HTRS Schientific Symposium: Session IIIB-Coagulation in Pediatric Heart Disease	0062-9999-15-007-L01-P	1.5 (0.15)	New Orleans	Knowledge	0062 - South Carolina College of Pharmacy

2015 HTRS Scientific Symposium: Session IIIA-Hemophilia and Aging	0062-9999-15-006-L01-P	1.5 (0.15)	New Orleans	Knowledge	0062 - South Carolina College of Pharmacy
2015 HTRS Scientific Symposium: Session IV	0062-9999-15-008-L01-P	4 (0.4)	New Orleans	Knowledge	0062 - South Carolina College of Pharmacy
2015 Minnesota Stroke Conference	0256-9999-15-759-L01-P	6.25 (0.625)	St. Paul	Knowledge	0256 - American Heart Association
27th Annual North American Cystic Fibrosis Conference	0816-0000-13-039-L01-P	20.5 (2.05)	Salt Lake City	Knowledge	0816 - Medical Education Resources, Inc.
2-Day Seminar: The Cardiac Essentials Conference for Nurses	0289-0000-14-107-L01-P	14 (1.4)	Burbank	Knowledge	0289 - PESI, Inc.
2-Day Seminar: The Cardiac Essentials Conference for Nurses	0289-0000-14-107-L01-P	14 (1.4)	Seattle	Knowledge	0289 - PESI, Inc.
2-Day Seminar: The Cardiac Essentials Conference for Nurses	0289-0000-14-107-L01-P	14 (1.4)	Seattle	Knowledge	0289 - PESI, Inc.
34th Annual Conference at the Slopes	0159-9999-14-032-L04-P	19 (1.9)	Champion	Knowledge	0159 - Pennsylvania Pharmacists Association
4th Annual Anticoagulation Boot Camp, Day One	0060-9999-16-001-L01-P	5.25 (0.525)	Salt Lake City	Knowledge	0060 - University of Rhode Island College of Pharmacy
4th Annual Anticoagulation Boot Camp, Day Two	0060-9999-16-002-L01-P	4.25 (0.425)	Salt Lake City	Knowledge	0060 - University of Rhode Island College of Pharmacy
6th Annual Duke Electrophysiology Summit: State of the Art Heart Rhythm Care Through Collaboration	0851-0000-16-074-L01-P	7 (0.7)	Durham	Knowledge	0851 - Duke University Health System Department of Clinical Education & Professional Development
A Life Cycle Journey in Heart Failure Across the Life Span	0256-0000-14-727-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
A Pathophysiologic Review of the Cardiovascular System	0011-0000-13-031-L04-P	1.5 (0.15)	Orlando/850-599-3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
A Patient-centered Approach to Providing Pharmaceutical Care to Patients with Chronic Obstructive Pulmonary Disease	0112-0000-15-136-L01-P	1.5 (0.15)	Detroit	Knowledge	0112 - Michigan Pharmacists Association
A Pharmacist's Guide to Using Fluids, Vasopressors, and Inotropes in Shock	0179-0000-15-008-L01-P	2 (0.2)	Hyatt New Orleans	Knowledge	0179 - Louisiana Society of Health-System Pharmacists

A Review of Dislipidemia Management and Pharmacotherapy	0136-9999-13-023-L01-P	2 (0.2)	Dover Downs	Knowledge	0136 - New Jersey Pharmacists Association
A Touch of Sugar♦: Controlling Hyperglycemia in Acute Care Settings	0163-0000-13-167-L01-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Abstract Poster Sessions	0256-0000-14-743-L01-P	1 (0.1)	Chicago	Knowledge	0256 - American Heart Association
Abstract Poster Sessions	0256-0000-14-744-L01-P	1 (0.1)	Chicago	Knowledge	0256 - American Heart Association
Abstract Poster Sessions	0256-0000-14-745-L01-P	1 (0.1)	Chicago	Knowledge	0256 - American Heart Association
AC Forum 13th National Conference on Anticoagulation Therapy, 3 day	0060-9999-15-010-L01-P	14.25 (1.425)	Washington	Knowledge	0060 - University of Rhode Island College of Pharmacy
AC Forum Highlights, Day One	0060-9999-14-003-L01-P	2.75 (0.275)	Miami	Knowledge	0060 - University of Rhode Island College of Pharmacy
AC Forum Highlights, Day Two	0060-9999-14-004-L01-P	4 (0.4)	Miami	Knowledge	0060 - University of Rhode Island College of Pharmacy
ACCF/AHA Guidelines for the Management of Heart Failure	0165-0000-14-086-L01-P	1.5 (0.15)	Sea	Knowledge	0165 - Florida Pharmacy Association
Acute Coronary Syndrome Treatment and Long Term Preventative Management	0011-0000-13-038-L04-P	1 (0.1)	Orlando/850-599-3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
Acute Coronary Syndrome: From Door to Discharge	0289-0000-13-100-L01-P	2 (0.2)	Las Vegas	Knowledge	0289 - PESI, Inc.
Acute Coronary Syndromes: An Update in Management	0280-0000-14-099-L01-P	1 (0.1)	Randolph	Knowledge	0280 - American Health Resources
Acute Management of Cardioembolic Stroke	0022-0000-14-081-L01-P	0.5 (0.05)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy
Acute Pulmonary Embolism	0377-0000-15-005-L01-P	1 (0.1)	Columbia University Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
Adult Acute Cardiac Care	0741-0000-13-007-L04-P	5 (0.5)	Miami, Caribbean Cruise, 8009405860, www.universit	Knowledge	0741 - University Learning Systems, Inc.
Adult Acute Cardiac Care	0741-0000-13-007-L04-P	5 (0.5)	Miami, Caribbean Cruise, 8009405860, www.universit	Knowledge	0741 - University Learning Systems, Inc.
Advanced and Surgical Treatment of CHF	0256-0000-14-715-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association

Advanced Cardiac Life Support: 2015 Update	0163-9999-16-021-L01-P	1 (0.1)	Tampa	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Advances in Anticoagulation Therapy	0202-0000-14-162-L01-P	1.5 (0.15)	webinar	Knowledge	0202 - American Pharmacists Association
Advances in Anticoagulation	0067-0000-14-012-L01-P	1 (0.1)	Austin, Texas	Knowledge	0067 - University of Texas at Austin College of Pharmacy
Advances in Pharmacotherapy 2015	0100-0000-15-067-L01-P	1.5 (0.15)	Tucson	Knowledge	0100 - Arizona Pharmacy Association
Advances in the Pharmacotherapy of Cardiovascular Diseases	0217-0000-15-149-L01-P	1.5 (0.15)	www.accp.com/gc	Knowledge	0217 - American College of Clinical Pharmacy
Advances in the Pharmacotherapy of Cardiovascular Diseases	0217-0000-15-149-L01-P	1.5 (0.15)	www.accp.com/gc	Knowledge	0217 - American College of Clinical Pharmacy
Advances in the treatment of Pulmonary Arterial Hypertension	0106-9999-13-021-L01-P	1 (0.1)	Mashantucket	Knowledge	0106 - Connecticut Pharmacists Association
Adverse Drug Events in the Elderly: A Focus on Anticoagulants, Opiates and Hypoglycemic Agents	0106-9999-15-043-L01-P	1 (0.1)	Foxboro, MA	Knowledge	0106 - Connecticut Pharmacists Association
AFIB and C-Diff	0854-0000-15-006-L01-P	3 (0.3)	Tampa/www.seniorecare.com	Knowledge	0854 - Florida Association of Consultant Pharmacists
AFIB and C-Diff	0854-0000-15-006-L01-P	3 (0.3)	Tampa/www.seniorecare.com	Knowledge	0854 - Florida Association of Consultant Pharmacists
Age Management Medicine Group: 15th Clinical Applications for Age Management Medicine Conference	0347-9999-13-028-L01-P	27 (2.7)	Las Vegas, The Cosmopolitan, 7:30am	Knowledge	0347 - Foundation for Care Management
Air Quality Warning: Use the NEW COPD Toolkit to Improve Patient Outcomes	0175-0000-14-803-L01-P	1 (0.1)	Madison	Knowledge	0175 - Pharmacy Society of Wisconsin
Alternatives Therapies for Heart Failure: Fact or Fiction	0008-9999-15-097-L01-P	1.5 (0.15)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Ambulatory Care Updates	0217-9999-14-083-L01-P	2 (0.2)	Cleveland	Knowledge	0217 - American College of Clinical Pharmacy
AMMG - 14th Clinical Applications for Age Management Medicine	0347-9999-13-005-L01-P	27 (2.7)	Hollywood, The Westing Diplomat Resort & Spa, 3 da	Knowledge	0347 - Foundation for Care Management

AMMG - 14th Clinical Applications for Age Management Medicine	0347-9999-13-005-L01-P	27 (2.7)	Las Vegas, The Cosmopolitan	Knowledge	0347 - Foundation for Care Management
An Oral Anticoagulant Primer	0011-0000-13-033-L04-P	1.5 (0.15)	Orlando/850-599-3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
An Overview of Pulmonary Hypertension and Current Treatment Options	0510-0000-14-012-L01-P	1 (0.1)	Detroit	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
An Update Across the Spectrum of Heart Failure Management	0106-9999-15-027-L01-P	1 (0.1)	Lake Morey Resort, Fairlee VT	Knowledge	0106 - Connecticut Pharmacists Association
An Update on Current Hypertensive Management Strategies	0011-0000-13-032-L04-P	1.5 (0.15)	Orlando/850-599-3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
An Update on the Current Management of Atrial Fibrillation	0011-0000-13-037-L04-P	1.5 (0.15)	Orlando/850-599-3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
An Update on the Current Practice for Management of an Acute Ischemic Stroke	0470-9999-13-007-L01-P	1.5 (0.15)	Oakwood, VA/www.acp.edu/276-498-5208	Knowledge	0470 - Medication Management Center
An Update on the Current Practice for Management of an Acute Ischemic Stroke	0470-9999-13-007-L01-P	1.5 (0.15)	Oakwood, VA/www.acp.edu/276-498-5208	Knowledge	0470 - Medication Management Center
An Update on the Management of Stable Chronic Obstructive Pulmonary Disease (COPD)	0009-0000-13-094-L01-P	1 (0.1)	Rocky Hill	Knowledge	0009 - University of Connecticut School of Pharmacy

An Update on the Treatment of COPD	0027-0000-13-033-L01-P	1.5 (0.15)	Westport	Knowledge	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
An Update on the Treatment of COPD	0027-0000-13-040-L01-P	1.5 (0.15)	Quincy	Knowledge	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
An Update on the Treatment of COPD	0027-0000-13-069-L01-P	1.5 (0.15)	Lynnfield	Knowledge	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
Anthracycline-induced Cardiomyopathy: A New Paradigm for an Old Classic	0857-9999-15-054-L01-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Anticoag: Pipeline Agents for NOAC Reversal	0837-9999-15-095-L01-P	1 (0.1)	Bangor	Knowledge	0837 - University of New England College of Pharmacy
Anticoagulant Reversal	0173-0000-13-015-L04-P	1 (0.1)	Sun Valley www.ishp.shuttlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Anticoagulant Reversal	0173-0000-13-015-L04-P	1 (0.1)	Sun Valley www.ishp.shuttlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Anticoagulants	0100-9999-15-035-L04-P	1 (0.1)	Scottsdale	Knowledge	0100 - Arizona Pharmacy Association
Anticoagulants: The Rapidly Changing Landscape	0372-0000-13-016-L01-P	2 (0.2)	www.rxschool.com	Knowledge	0372 - Rx School
Anticoagulants: Where We Came From and Complications Along the Way	0043-0000-13-038-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Anticoagulation Boot Camp	0060-9999-14-063-L01-P	5.75 (0.575)	Boston	Knowledge	0060 - University of Rhode Island College of Pharmacy
Anticoagulation Boot Camp	0060-9999-14-063-L01-P	5.75 (0.575)	Salt Lake City	Knowledge	0060 - University of Rhode Island College of Pharmacy
Anticoagulation Boot Camp	0060-9999-14-063-L01-P	5.75 (0.575)	Seattle	Knowledge	0060 - University of Rhode Island College of Pharmacy
Anticoagulation Boot Camp 2014: from Basic to Advanced Practice	0134-9999-14-077-L01-P	6.5 (0.65)	Bemidji	Knowledge	0134 - New York State Council of Health-System Pharmacists
Anticoagulation Boot Camp, Day 2	0060-9999-14-064-L01-P	3 (0.3)	Boston	Knowledge	0060 - University of Rhode Island College of Pharmacy
Anticoagulation Boot Camp, Day 2	0060-9999-14-064-L01-P	3 (0.3)	Salt Lake City	Knowledge	0060 - University of Rhode Island College of Pharmacy
Anticoagulation Boot Camp, Day 2	0060-9999-14-064-L01-P	3 (0.3)	Seattle	Knowledge	0060 - University of Rhode Island College of Pharmacy
Anticoagulation Boot Camp, Day One	0060-9999-14-001-L01-P	4.5 (0.45)	Miami	Knowledge	0060 - University of Rhode Island College of Pharmacy
Anticoagulation Boot Camp, Day Two	0060-9999-14-002-L01-P	3.5 (0.35)	Miami	Knowledge	0060 - University of Rhode Island College of Pharmacy

Anticoagulation Bridging Therapy: Beyond the CHEST guidelines	0510-0000-14-023-L01-P	1 (0.1)	Detroit	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
Anticoagulation for Stroke Prevention in Atrial Fibrillation: Advances and Controversies	0256-0000-15-784-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Anticoagulation in 2013	0022-0000-13-110-L01-P	1 (0.1)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy
Anticoagulation in Left Ventricular Assist Device Patients	0036-9999-13-203-L04-P	1 (0.1)	Portland	Knowledge	0036 - Oregon State University
Anticoagulation in Prosthetic Valves: One Valve, Two Valve, Red Valve, Blue Valve	0510-0000-15-039-L01-P	1 (0.1)	Detroit	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
Anticoagulation in the Ambulatory Patient: A Focus on Patient Education	0043-0000-13-041-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Anticoagulation Management in Cancer	0175-0000-14-062-L01-P	1.25 (0.125)	Wisconsin Dells	Knowledge	0175 - Pharmacy Society of Wisconsin
Anticoagulation Pharmacotherapy: Clinical Pearls of the Newer Anticoagulants	0064-0000-15-067-L01-P	1 (0.1)	Nashville	Knowledge	0064 - University of Tennessee College of Pharmacy
Anticoagulation therapy for the treatment of pulmonary embolisms and venous thromboembolisms in the oncology/hematology patients".	0857-9999-14-012-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmac
Anticoagulation Therapy in TAVR: Harmonizing Bleeding and Stroke Risks	0256-0000-14-713-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Anticoagulation Therapy Update	0119-0000-15-003-L01-P	2 (0.2)	Saint George	Knowledge	0119 - Utah Pharmacists Association
Anticoagulation Update 2014	0112-0000-14-209-L01-P	1 (0.1)	Bellaire	Knowledge	0112 - Michigan Pharmacists Association
Anticoagulation Utilization for Stroke Prevention in Patients with Atrial Fibrillation and Atrial Flutter	0280-0000-14-026-L01-P	1.5 (0.15)	Nashua	Knowledge	0280 - American Health Resources
Anticoagulation Utilization for Stroke Prevention in Patients with Atrial Fibrillation and Atrial Flutter	0280-0000-14-031-L01-P	1.5 (0.15)	Plymouth	Knowledge	0280 - American Health Resources

Anticoagulation: Considerations in Geriatric Patients and Palliative Care Settings	0043-0000-13-040-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
AntiCoagulation: What the Guidelines Don't Share	0113-0000-15-083-L03-P	1.5 (0.15)	Orange	Knowledge	0113 - California Pharmacists Association
Antithrombotic Therapy and Management of Bleeds in High Risk Patients	0136-0000-14-033-L01-P	1.5 (0.15)	Asbury Park	Knowledge	0136 - New Jersey Pharmacists Association
Antithrombotic Therapy in Atrial Fibrillation: A Case Based Approach	0215-0000-13-001-L01-P	2 (0.2)	New Orleans	Knowledge	0215 - National Pharmaceutical Association, Inc.
Anti-Xa Monitoring of Anticoagulants	0064-0000-13-126-L01-P	1 (0.1)	Chattanooga	Knowledge	0064 - University of Tennessee College of Pharmacy
Application of Pharmacogenomics in Clinical Practice: Are You Ready?	0100-9999-16-008-L04-P	1 (0.1)	Tucson	Knowledge	0100 - Arizona Pharmacy Association
Apps in HealthCare	0826-9999-14-006-L01-P	1 (0.1)	Live Online	Knowledge	0826 - MED2000, Inc.
Apps in HealthCare	0826-9999-14-006-L01-P	1 (0.1)	Live Online	Knowledge	0826 - MED2000, Inc.
Around the Center in Four Cases: Clinical Advances in Cystic Fibrosis Patient Care	0530-9999-13-067-L01-P	2 (0.2)	Salt Lake City	Knowledge	0530 - Global Education Group
Arrhythmia Debates: AF	0256-0000-15-809-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Arrhythmia Debates: VT	0256-0000-15-810-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Arrhythmias	0140-0000-14-119-L01-P	0.75 (0.075)	Marshfield	Knowledge	0140 - Marshfield Clinic Health Systems, Inc.
ARRHYTHMIAS AND AN UPDATE OF ANTICOAGULATION THERAPY	0043-9999-15-022-L01-P	5 (0.5)	New Orleans	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
ARRHYTHMIAS AND AN UPDATE OF ANTICOAGULATION THERAPY	0043-9999-15-022-L01-P	5 (0.5)	Uniondale	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Atherosclerotic Cardiovascular Risk in Adults: Then and Now	0165-0000-14-088-L01-P	1.5 (0.15)	Ft. Lauderdale	Knowledge	0165 - Florida Pharmacy Association
Atrial Fibrillation	0059-9999-15-058-L01-P	0.75 (0.075)	Hyatt Regency LA 909-706-3826	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Atrial Fibrillation	0163-0000-15-163-L01-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Atrial Fibrillation Ablation	0108-0000-15-039-L01-P	1 (0.1)	Williamsburg	Knowledge	0108 - Virginia Society of Health-System Pharmacists
Atrial Fibrillation Guidelines Update for Stroke Prevention	0022-0000-14-078-L01-P	0.75 (0.075)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy
Atrial Fibrillation NOACs and Stroke	0256-0000-15-808-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association

Atrial Fibrillation Treatment in Older Adults	0372-0000-14-019-L01-P	2 (0.2)	www.rxschool.com	Knowledge	0372 - Rx School
Atrial Fibrillation: It's not so Simple Anymore	0289-0000-13-103-L01-P	2 (0.2)	Las Vegas	Knowledge	0289 - PESI, Inc.
Atrial Fibrillation: State of the Art and Future Direction	0256-0000-15-798-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Babysitting enoxaparin: how should anti-Xa levels be monitored in pediatric patients?	0857-9999-14-033-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Balancing the Vascular Fluids	0016-9999-13-052-L01-P	1.5 (0.15)	Orlando	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Battle of the Bulge: When to Repair AAA	0414-9999-13-260-L02-P	0.75 (0.075)	Willmington	Knowledge	0414 - Wingate University School of Pharmacy
Best of AHA Specialty Conferences: Hypertension 2015	0256-0000-15-776-L01-P	0.75 (0.075)	Orlando	Knowledge	0256 - American Heart Association
Review of Important Practice Guidelines That We Aren't (still) Waiting For	0036-9999-13-207-L01-P	1 (0.1)	Portland	Knowledge	0036 - Oregon State University
Beyond the Device: Comprehensive Care of Implantable Cardioverter Defibrillator Patients	0845-0000-15-082-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Beyond Warfarin: Oral Anticoagulation in Clinical Practice	0215-0000-15-731-L01-P	1.5 (0.15)	Biloxi	Knowledge	0215 - National Pharmaceutical Association, Inc.
BHRT Part II - Mastering the Protocols for Optimization of Hormone Replacement Therapy - Advanced Protocols	0347-9999-15-002-L01-P	21 (2.1)	Salt Lake City, Hilton Salt Lake City Center	Knowledge	0347 - Foundation for Care Management
Breathe Easy? Obstructive Lung Disease in the ICU	0163-9999-14-240-L01-P	1 (0.1)	Jacksonville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Bridging in Atrial Fibrillation: A Need for Change	0510-0000-15-037-L01-P	1 (0.1)	Detroit	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
Bringing It All Together	0741-0000-15-023-L01-P	5 (0.5)	Kahala Cst /www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc
Bringing It All Together	0741-0000-15-023-L01-P	5 (0.5)	Kahala Cst /www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc
Bugs & Drugs: What the Non-Physician Needs to Know	0816-0000-13-038-L01-P	4 (0.4)	Salt Lake City	Knowledge	0816 - Medical Education Resources, Inc.
Calcium Channel Antagonists: An Update	0190-0000-15-001-L01-P	2 (0.2)	Adria Hotel, Bayside, New York	Knowledge	0190 - Drug Experts Inc.

Calorie Restrictive Diets: Medical Benefits & Risks	0826-9999-14-017-L01-P	1 (0.1)	http://ceinternational.com/crdiets.aspx	Knowledge	0826 - MED2000, Inc.
Cardiac Arrhythmias in Acute Coronary Syndromes	0256-0000-15-803-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Cardiac Assessment of CHD: What You Need to Know	0263-0000-13-407-L01-P	1.5 (0.15)	Washington/Contemporary forums.com/800 377-7707	Knowledge	0263 - Contemporary Forums
Cardiac Assessment of CHD: What You Need to Know	0263-0000-13-407-L01-P	1.5 (0.15)	Washington/Contemporary forums.com/800 377-7707	Knowledge	0263 - Contemporary Forums
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Albany	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Arlington	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Bloomington	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Cheektowaga	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	College Park	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Columbia	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Des Moines	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Eagan	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Lincoln	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Lisle	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Norfolk	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Omaha	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Richmond	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Roanoke	Knowledge	0289 - PESI, Inc.

Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Schaumburg	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	St. Cloud	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Syracuse	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Current Evidence-Based Management Practices	0289-0000-13-086-L01-P	6.3 (0.63)	Tinley Park	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-14-004-L01-P	6.3 (0.63)	Bethlehem	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-14-004-L01-P	6.3 (0.63)	Cherry Hill	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-14-004-L01-P	6.3 (0.63)	King of Prussia	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-14-017-L01-P	6.3 (0.63)	Bethlehem	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-14-017-L01-P	6.3 (0.63)	Cherry Hill	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-14-017-L01-P	6.3 (0.63)	King of Prussia	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-14-017-L01-P	6.3 (0.63)	Martinsburg	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-15-009-L01-P	6.3 (0.63)	Ellicott City	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-15-009-L01-P	6.3 (0.63)	Fairfax	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders	0289-0000-15-009-L01-P	6.3 (0.63)	Silver Spring	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders Sean Smith	0289-0000-14-022-L01-P	6.3 (0.63)	Manhattan	Knowledge	0289 - PESI, Inc.
Cardiac Medications: Management of Complex Cardiovascular Disorders Sean Smith	0289-0000-14-022-L01-P	6.3 (0.63)	New Rochelle	Knowledge	0289 - PESI, Inc.

Cardiac Medications: Management of Complex Cardiovascular Disorders - Sean Smith	0289-0000-14-022-L01-P	6.3 (0.63)	Uniondale	Knowledge	0289 - PESI, Inc.
Cardio Guidelines for Translating Science to Clinical Practice: Lipid Management in Type 2 Diabetes Mellitus	0834-0000-13-037-L01-P	1 (0.1)	Corpus Christi/361-992-0664	Knowledge	0834 - Texas A&M Health Science Center Coastal Bend Health Education Center
Cardio/Pulmonary Medicine for Primary Care	0816-0000-14-048-L01-P	14 (1.4)	Bahamas	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care	0816-0000-14-048-L01-P	14 (1.4)	Mackinac Island	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care	0816-0000-14-073-L01-P	11 (1.1)	Hilton Head	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care	0816-0000-14-073-L01-P	11 (1.1)	Las Vegas	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care	0816-0000-14-073-L01-P	11 (1.1)	Orlando	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care	0816-0000-14-073-L01-P	11 (1.1)	San Diego	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care	0816-0000-14-073-L01-P	11 (1.1)	Scottsdale	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care - 4 Day	0816-0000-16-006-L01-P	14 (1.4)	Nassau, Bahamas	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care 3 Day	0816-0000-15-003-L01-P	11 (1.1)	Las Vegas	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care 3 Day	0816-0000-15-003-L01-P	11 (1.1)	Monterey	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care 3 Day	0816-0000-15-003-L01-P	11 (1.1)	Orlando	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care 4 Day	0816-0000-15-004-L01-P	14 (1.4)	Anaheim	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care 4 Day	0816-0000-15-004-L01-P	14 (1.4)	Key West	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care 4 Day	0816-0000-15-004-L01-P	14 (1.4)	Nassau	Knowledge	0816 - Medical Education Resources, Inc.
Cardio/Pulmonary Medicine for Primary Care 4 Day	0816-0000-15-004-L01-P	14 (1.4)	San Diego	Knowledge	0816 - Medical Education Resources, Inc.
Cardiogenic Shock	0043-0000-15-046-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Cardiology Clinical Trials Reviewed	0036-9999-13-021-L01-P	1 (0.1)	Gleneden Beach	Knowledge	0036 - Oregon State University

Cardiology Part 1	0163-9999-14-111-L04-P	1 (0.1)	Gainesville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Cardiology Part 1	0163-9999-15-101-L01-P	1 (0.1)	Gainesville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Cardiology Part 2	0163-9999-14-115-L01-P	1 (0.1)	Gainesville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Cardiology Part 2	0163-9999-15-105-L01-P	1 (0.1)	Gainesville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Cardiology PRN Focus Session—Making Bloody Sense of Antithrombotic Therapy During Percutaneous	0217-0000-15-126-L01-P	1.5 (0.15)	www.accp.com/gc	Knowledge	0217 - American College of Clinical Pharmacy
Cardiometabolic Health Congress 2015	0816-9999-15-055-L01-P	26.75 (2.675)	Boston	Knowledge	0816 - Medical Education Resources, Inc.
CardiOncology- What, Why and Who Cares?	0106-9999-14-011-L01-P	1 (0.1)	Ogunquit, ME	Knowledge	0106 - Connecticut Pharmacists Association
Cardiorenal Syndrome - State of the Art	0256-0000-15-794-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Cardiovascular Assessment in Emergency Situations	0289-0000-13-101-L01-P	2 (0.2)	Las Vegas	Knowledge	0289 - PESI, Inc.
Cardiovascular Considerations in HCT	0299-9999-15-009-L01-P	0.75 (0.075)	San Diego	Knowledge	0299 - Syntaxx Communications, Inc.
Cardiovascular Disease and Diabetes	0062-9999-13-134-L01-P	1 (0.1)	Charleston (843-876-0968)	Knowledge	0062 - South Carolina College of Pharmacy
Cardiovascular Disease and Treatment	0042-0000-14-013-L01-P	5 (0.5)	http://liu.rxsc.hool.com	Knowledge	0042 - Arnold and Marie Schwartz College of Pharmacy and Health Sciences of Long Island University
Cardiovascular Disease Education	0060-9999-13-039-L01-P	6.5 (0.65)	Warwick	Knowledge	0060 - University of Rhode Island College of Pharmacy
Cardiovascular Disease Outpatient Education Session II	0060-9999-15-037-L01-P	6 (0.6)	Warwick	Knowledge	0060 - University of Rhode Island College of Pharmacy
Cardiovascular Disease Part 1: Risk Reduction in Primary Prevention Patients	0741-0000-15-001-L01-P	5 (0.5)	Naples/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc
Part 1: Risk Reduction in Primary Prevention Patients	0741-0000-15-001-L01-P	5 (0.5)	niversitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc
Cardiovascular Disease Part 2: Management of Heart Failure, Stable Ischemic Heart Disease, and Peripheral Arterial Disease	0741-0000-15-002-L01-P	5 (0.5)	Naples/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Disease Part 2: Management of Heart Failure, Stable Ischemic Heart Disease, and Peripheral Arterial Disease	0741-0000-15-002-L01-P	5 (0.5)	Naples/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.

Cardiovascular Disease Part 3: Updates in Atrial Fibrillation, Secondary Prevention of Stroke, and Special Populations	0741-0000-15-003-L01-P	5 (0.5)	Naples/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Disease Part 3: Updates in Atrial Fibrillation, Secondary Prevention of Stroke, and Special Populations	0741-0000-15-003-L01-P	5 (0.5)	Naples/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Disease Symposium for the Primary Care Provider	0032-9999-14-032-L01-P	3.25 (0.325)	Jackson	Knowledge	0032 - University of Mississippi School of Pharmacy
Update- Hypertension and Hyperlipidemia (Focus on Special Populations)	0120-0000-14-213-L01-P	1.5 (0.15)	Indianapolis	Knowledge	0120 - Pharmacists Education Foundation
Cardiovascular Disease: New Updates & Guidelines	0826-9999-13-042-L01-P	2 (0.2)	http://ceinternational.com/cvdnew.aspx	Knowledge	0826 - MED2000, Inc.
Cardiovascular Disease: New Updates & Guidelines	0826-9999-13-042-L01-P	2 (0.2)	http://ceinternational.com/cvdnew.aspx	Knowledge	0826 - MED2000, Inc.
Cardiovascular Guidelines: Reviewing the Science and the Controversy	0280-0000-14-093-L01-P	1.5 (0.15)	Springfield	Knowledge	0280 - American Health Resources
Cardiovascular Issues in the Elderly	0043-0000-14-032-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	Indianapolis/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forum
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	Indianapolis/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forum
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	Las Vegas/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	Las Vegas/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	San Francisco/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	San Francisco/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums

Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-15-517-L01-P	3.5 (0.35)	Las Vegas	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-15-517-L01-P	3.5 (0.35)	Philadelphia	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-15-517-L01-P	3.5 (0.35)	San Francisco	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology Advanced Treatment Strategies - Holuby	0289-0000-14-025-L01-P	6.3 (0.63)	Bloomington	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology Advanced Treatment Strategies - Holuby	0289-0000-14-025-L01-P	6.3 (0.63)	Roseville	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology Advanced Treatment Strategies - Holuby	0289-0000-14-025-L01-P	6.3 (0.63)	St Cloud	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Columbia	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Garden City	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Honolulu	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Manhattan	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Oakland	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Portland	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	San Jose	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Springfield	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	St. Louis	Knowledge	0289 - PESI, Inc.

Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Tarrytown	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	www.pesihealthcare.com	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacotherapeutics: Anticoagulants/Antiplatelets	0064-0000-15-032-L01-P	2 (0.2)	Knoxville	Knowledge	0064 - University of Tennessee College of Pharmacy
Cardiovascular Pharmacotherapeutics: Hyperlipidemia, Angina and Cardiac Arrhythmias	0064-0000-15-034-L01-P	2 (0.2)	Knoxville	Knowledge	0064 - University of Tennessee College of Pharmacy
Cardiovascular Pharmacotherapeutics: Hypertension and Heart Failure	0064-0000-15-033-L01-P	2 (0.2)	Knoxville	Knowledge	0064 - University of Tennessee College of Pharmacy
Cardiovascular Risk Factors in Pediatrics: Managing Hypertension, Dyslipidemia, and Diabetes Mellitus	0175-0000-14-024-L01-P	1 (0.1)	Madison	Knowledge	0175 - Pharmacy Society of Wisconsin
Cardiovascular Risk Reduction After an Acute Coronary Syndrome	0059-9999-15-036-L01-P	0.75 (0.075)	Hyatt Regency LA 909-706-3826	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Cardiovascular Risk Reduction: What Do the Guidelines Say?	0112-0000-14-211-L01-P	1 (0.1)	Bellaire	Knowledge	0112 - Michigan Pharmacists Association
Cardiovascular Therapeutics Update: Heart Failure, Anticoagulation, and Arrhythmias	0741-0000-15-028-L01-P	5 (0.5)	Las Vegas/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Therapeutics Update: Heart Failure, Anticoagulation, and Arrhythmias	0741-0000-15-028-L01-P	5 (0.5)	Las Vegas/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Update	0120-0000-15-014-L01-P	1.25 (0.125)	Fort Wayne IN	Knowledge	0120 - Pharmacists Education Foundation
Cardiovascular Update 2015	0112-0000-15-211-L01-P	1 (0.1)	Bellaire	Knowledge	0112 - Michigan Pharmacists Association
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	Las Vegas/www.contemporaryforums.com/925828-7100	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	Las Vegas/www.contemporaryforums.com/925828-7100	Knowledge	0263 - Contemporary Forums

Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	San Francisco/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	San Francisco/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	Washington/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	Washington/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Central WI 2013: An Update on Respiratory Diseases: Guidelines and Beyond	0073-0000-13-020-L01-P	3.5 (0.35)	Stevens Point	Knowledge	0073 - Division of Pharmacy Professional Development University of Wisconsin-Madison
Cerebrovascular Diseases	0163-9999-14-012-L04-P	2 (0.2)	Weston	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Challenges in Venous Thromboembolism	0256-0000-15-778-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Challenging Standards of Care in Venous Thromboembolism	0256-0000-15-813-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
CHF Management	0011-0000-13-039-L04-P	1 (0.1)	Orlando/850-599-3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
Cholesterol Guidelines: Updates	0163-9999-14-077-L01-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Chronic and Acute Ischemic Heart Disease I	0256-0000-15-774-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Chronic and Acute Ischemic Heart Disease II	0256-0000-15-791-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Chronic and Acute Ischemic Heart Disease III	0256-0000-15-793-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Chronic Disease Update: Hypertension, Atrial Fibrillation, Diabetes	0845-9999-15-047-L04-P	1.33 (0.133)	Tyson's Corner	Knowledge	0845 - University of North Texas Health Science Center
Chronic Disease: Diabetes and Cardiovascular	0011-0000-15-009-L04-P	1.5 (0.15)	Tallahassee/850.599.3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
Chronic Heart Failure Case through Transitions of Care	0163-0000-14-170-L04-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.

Circulatory Support Devices - Inpatient, Outpatient, and Transitions of Care Considerations for Pharmacists	0217-9999-15-084-L04-P	1.5 (0.15)	Milwaukee	Knowledge	0217 - American College of Clinical Pharmacy
Clinical / Management Pearls	0025-9999-14-156-L01-P	1 (0.1)	Annapolis	Knowledge	0025 - University of Maryland School of Pharmacy
Clinical Controversies in Cardiovascular Disease	0067-0000-15-021-L01-P	1 (0.1)	Austin, Texas	Knowledge	0067 - University of Texas at Austin College of Pharmac
Clinical Fundamentals I: The Immune Response in Cardiovascular Disease	0008-9999-15-083-L01-P	2 (0.2)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Clinical Fundamentals II: FAQs About Heart Failure Drug Therapy	0008-9999-15-092-L01-P	1.25 (0.125)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Clinical Fundamentals III: Acute Heart Failure	0008-9999-15-098-L01-P	1.25 (0.125)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Clinical guideline updates for the management of hypertension and hyperlipidemia	0217-9999-14-078-L01-P	1 (0.1)	Omaha	Knowledge	0217 - American College of Clinical Pharmacy
Clinical management of outpatient anticoagulation	0106-0000-15-006-L01-P	1 (0.1)	Aqua Turf Club, Plantsville, CT	Knowledge	0106 - Connecticut Pharmacists Association
Clinical Pearls for Improving Patient Care 2014	0060-0000-14-024-L01-P	1.5 (0.15)	Bethel	Knowledge	0060 - University of Rhode Island College of Pharmacy
Clinical Pearls on the Use of Novel Anti-Platelet Agents and Target-Specific Oral Anticoagulants	0453-9999-15-141-L04-P	0.5 (0.05)	Lombard	Knowledge	0453 - Amedco, LLC
Clinical Practice Guideline in Managing Heart Failure in the Long-Term Care Setting: What We Have Learned and How We Move Forward?	0002-9999-15-022-L01-P	1.5 (0.15)	Louisville	Knowledge	0002 - Samford University McWhorter School of Pharmacy
Clinical Review of Oral Anticoagulants and its Associated Drug Interactions	0136-0000-15-015-L01-P	2 (0.2)	Somerville	Knowledge	0136 - New Jersey Pharmacists Association
COBTH Pharmacy Resident Clinical Pearls	0027-0000-14-092-L01-P	1.5 (0.15)	Boston	Knowledge	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
Code STEMI: The Pharmacist's Role	0163-9999-13-205-L01-P	1 (0.1)	Ft. Myers	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.

Collaborative Drug Therapy Management of COPD at Virginia Garcia Beaverton	0036-9999-16-103-L01-P	1.5 (0.15)	Eugene	Knowledge	0036 - Oregon State University
Comorbidities and COPD	0845-0000-15-104-L04-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
Comorbidities and COPD	0845-0000-15-104-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Comparison and Review of New Hyperlipidemia Guidelines	0165-0000-14-085-L01-P	2 (0.2)	Sea	Knowledge	0165 - Florida Pharmacy Association
Complications of Mechanical Circulatory Support	0377-0000-13-006-L01-P	1 (0.1)	New York, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
Comprehensive Medical Update	0159-9999-13-059-L04-P	14 (1.4)	Champion	Knowledge	0159 - Pennsylvania Pharmacists Association
Comprehensive Review of Anticoagulation	0013-0000-16-001-L04-P	1 (0.1)	Atlanta	Knowledge	0013 - Mercer University College of Pharmacy
Congestive Heart Failure	0163-9999-15-059-L01-P	1 (0.1)	Tallahassee	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Considerations for Medication Use in the Geriatric Patient	0060-0000-15-035-L01-P	4 (0.4)	Warwick	Knowledge	0060 - University of Rhode Island College of Pharmacy
Contemporary Cardiometabolic Concepts	0060-9999-13-038-L01-P	5 (0.5)	Providence	Knowledge	0060 - University of Rhode Island College of Pharmacy
Contemporary Considerations in Anticoagulant Management	0280-0000-13-086-L01-P	1.5 (0.15)	Westborough	Knowledge	0280 - American Health Resources
Contemporary Considerations in Anticoagulation Management	0280-0000-13-095-L01-P	1.5 (0.15)	Rocky Hill	Knowledge	0280 - American Health Resources
Contemporary Considerations in Anticoagulation Management	0280-0000-13-106-L01-P	1.5 (0.15)	Randolph	Knowledge	0280 - American Health Resources
Contemporary Management of Heart Failure Patients	0009-0000-14-084-L01-P	1 (0.1)	Rocky Hill	Knowledge	0009 - University of Connecticut School of Pharmacy
Contemporary Management of Hypertension and Cholesterol: Implications for Cardiovascular Prevention and System Approaches to Improve Patient Care	0741-0000-14-014-L01-P	5 (0.5)	Las Vegas /www.universitylearning.com/ 800-940-58	Knowledge	0741 - University Learning Systems, Inc.

Contemporary Management of Hypertension and Cholesterol: Implications for Cardiovascular Prevention and System Approaches to Improve Patient Care	0741-0000-14-014-L01-P	5 (0.5)	Las Vegas /www.universi tylearning.co m/ 800-940- 58	Knowledge	0741 - University Learning Systems, Inc.
Controlling Comorbidities for Cardiovascular Wellness	0062-9999-15-019-L01-P	4.25 (0.425)	Greenville (GHS)	Knowledge	0062 - South Carolina College of Pharmacy
Controversial Issues in Anticoagulation	0217-9999-15-088-L01-P	1.5 (0.15)	Minneapolis	Knowledge	0217 - American College of Clinical Pharmacy
Controversial Issues in the Management of Coronary Artery Disease Patients	0256-0000-15-783-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Controversies in Cardio-oncology	0008-9999-15-094-L01-P	1.5 (0.15)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Controversies in RV Failure Management	0256-0000-15-792-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
COPD Clinical Pearls	0163-9999-14-216-L01-P	1 (0.1)	Tampa	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
COPD Treatment and Transitions of Care	0837-0000-13-036-L01-P	2 (0.2)	Portland	Knowledge	0837 - University of New England College of Pharmacy
COPD Update	0119-0000-14-005-L01-P	1 (0.1)	Saint George	Knowledge	0119 - Utah Pharmacists Association
COPD Update	0837-9999-14-111-L01-P	1 (0.1)	Bedford	Knowledge	0837 - University of New England College of Pharmacy
COPD Updates in Therapy	0618-0000-15-012-L01-P	1 (0.1)	West Palm Beach	Knowledge	0618 - Palm Beach Atlantic University
COPD: How to Align Quality Metrics & Clinical Outcomes with Pharmacist Services	0106-0000-15-076-L01-P	1 (0.1)	Plantsville, CT	Knowledge	0106 - Connecticut Pharmacists Association
COPD: Tackling the Transition	0009-9999-15-009-L01-P	1.75 (0.175)	Plantsville	Knowledge	0009 - University of Connecticut School of Pharmacy
COPD: Taking a Fresh Look at a Continually Increasing Problem	0347-0000-14-031-L01-P	1.5 (0.15)	Ketchikan, Best Western Landing, 6:30pm	Knowledge	0347 - Foundation for Care Management
COPD: Taking a Fresh Look at a Continually Increasing Problem - Best Practice Strategies for Primary Care Providers and Pharmacists	0347-0000-14-015-L01-P	1 (0.1)	Coupeville, Whidbey General Hospital	Knowledge	0347 - Foundation for Care Management

COPD: Taking a Fresh Look at a Continually Increasing Problem - Best Practice Strategies for Primary Care Providers and Pharmacists	0347-0000-14-015-L01-P	1 (0.1)	Medical Lake, Eastern State Hospital, 12:00pm Noo	Knowledge	0347 - Foundation for Care Management
COPD: Taking a Fresh Look at a Continually Increasing Problem - Best Practice Strategies for Primary Care Providers and Pharmacists	0347-0000-14-015-L01-P	1 (0.1)	Tacoma, Western State Hospital, 8:00am	Knowledge	0347 - Foundation for Care Management
COPD: What's new in the management of acute exacerbations?	0837-9999-15-131-L01-P	1 (0.1)	Worcester	Knowledge	0837 - University of New England College of Pharmacy
Coronary Artery Bypass Graft Surgery: Using Pharmaceutical Care to Maximize Patient Outcomes	0163-9999-14-264-L01-P	1 (0.1)	Melbourne	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Coronary Artery Spasm: Revisited in Cardiovascular Medicine	0256-0000-14-732-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
CPSL 2015 Annual Conference	0266-0000-15-006-L01-P	6 (0.6)	Danville/www.geisinger.org/570-271-6692	Knowledge	0266 - Geisinger Health System
CPSL 2015 Annual Conference	0266-0000-15-006-L01-P	6 (0.6)	Danville/www.geisinger.org/570-271-6692	Knowledge	0266 - Geisinger Health System
Critical Appraisal of Recently Approved New Molecular Entities and Biologic Agents	0100-9999-16-014-L01-P	1.5 (0.15)	Tucson	Knowledge	0100 - Arizona Pharmacy Association
Culinary Medicine: Food as a means of Prevention	0024-0000-14-010-L04-P	1.5 (0.15)	Xavier University of Louisiana College of Pharmacy	Knowledge	0024 - Xavier University of Louisiana College of Pharmacy
Curing Atherosclerosis: The Next Step in Cardiovascular Prevention?	0256-0000-14-739-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Current Concepts and Challenges in Cardiovascular Medicine	0062-9999-13-069-L01-P	3.5 (0.35)	GHS, HSEB 106, Greenville	Knowledge	0062 - South Carolina College of Pharmacy
Current Controversies in Medicine and Critical Care	0134-9999-14-073-L01-P	2 (0.2)	Buffalo	Knowledge	0134 - New York State Council of Health-System Pharmacists
Current Knowledge and Controversies in the Management of Stable Ischemic Heart Disease Among Patients with Type 2 Diabetes	0256-0000-15-801-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association

Current Treatment Options for COPD	0215-0000-13-729-L01-P	1 (0.1)	Biloxi	Knowledge	0215 - National Pharmaceutical Association, Inc.
Curricular Track III: Clinical Controversies—Fast and Furious	0217-0000-14-102-L01-P	1.5 (0.15)	Austin, www.accp.com/am	Knowledge	0217 - American College of Clinical Pharmacy
Curricular Track III: Clinical Controversies—Fast and Furious	0217-0000-14-102-L01-P	1.5 (0.15)	Austin, www.accp.com/am	Knowledge	0217 - American College of Clinical Pharmacy
Debate: Atrial Fibrillation and Kidney Disease	0016-9999-15-049-L01-P	1.5 (0.15)	Dallas	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Demystifying Cardiac Assist Devices	0289-0000-13-104-L01-P	2 (0.2)	Las Vegas	Knowledge	0289 - PESI, Inc.
Determining the place in therapy of sacubitril/valsartan in heart failure	0172-0000-15-018-L01-P	1 (0.1)	Tuscaloosa	Knowledge	0172 - Alabama Society of Health-System Pharmacists
Diabetes and Coronary Artery Disease: The Heart of the Matter	0053-9999-13-059-L01-P	1 (0.1)	Oklahoma City	Knowledge	0053 - University of Oklahoma College of Pharmacy
Diabetes Incretin Therapy Update	0834-0000-13-039-L01-P	1 (0.1)	Corpus Christi/361-992-0664	Knowledge	0834 - Texas A&M Health Science Center Coastal Bend Health Education Center
Diabetic Dyslipidemia and Cardiovascular Disease	0834-0000-13-038-L01-P	1 (0.1)	Corpus Christi/361-992-0664	Knowledge	0834 - Texas A&M Health Science Center Coastal Bend Health Education Center
Dietary Supplements and Cardiovascular Drugs: Balancing the benefits and risks of drug interactions.	0173-0000-13-014-L04-P	1 (0.1)	Sun Valley www.ishp.shuttlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Dietary Supplements and Cardiovascular Drugs: Balancing the benefits and risks of drug interactions.	0173-0000-13-014-L04-P	1 (0.1)	Sun Valley www.ishp.shuttlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Disease State Overview and Management	0215-0000-13-911-L01-P	3 (0.3)	Philadelphia	Knowledge	0215 - National Pharmaceutical Association, Inc.
DOACs: Avoiding Confusion In Clinical Practice	0112-0000-16-106-L01-P	1.25 (0.125)	Detroit	Knowledge	0112 - Michigan Pharmacists Association
Don't Fail Your Patients: Evidence Based Review of Heart Failure Treatment - Montana Pharmacy Association Winter CE & Ski Meeting	0035-9999-14-005-L01-P	2 (0.2)	Big Sky	Knowledge	0035 - Skaggs School of Pharmacy at the University of Montana
Don't Go Rejecting My Heart: Management Considerations in Heart Transplantation	0256-0000-14-731-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Dosing Considerations in Obese Patients	0043-0000-13-039-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences

Dr. McDougall's Health & Medical Center - Dietary-Therapy to Reverse Your Patients' Common Diseases	0347-9999-14-029-L01-P	180 (18)	Santa Rosa, Flamingo Resort & Spa, 707-545-8530	Knowledge	0347 - Foundation for Care Management
Drug Induced Prolongation of the QTc Interval	0106-9999-14-006-L01-P	1 (0.1)	Ogunquit, ME	Knowledge	0106 - Connecticut Pharmacists Association
Educating Patients on Appropriate Inhaler Use	0845-0000-16-002-L05-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
Educating Patients on Appropriate Inhaler Use	0845-0000-16-002-L05-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Emergent Reversal of Anticoagulation	0035-9999-15-051-L01-P	1 (0.1)	Big Sky	Knowledge	0035 - Skaggs School of Pharmacy at the University of Montana
Emerging Therapies in Chronic Heart Failure	0857-9999-16-082-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Enhancing the Team-Based Care of Heart Failure Patients	0175-0000-14-814-L01-P	1 (0.1)	Wisconsin Dells	Knowledge	0175 - Pharmacy Society of Wisconsin
Ensuring Quality Care for the Stroke Patient	0062-9999-13-071-L01-P	6.5 (0.65)	SRHS, Spartanburg	Knowledge	0062 - South Carolina College of Pharmacy
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Anaheim	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Bloomington	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Columbia	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Denver	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Honolulu	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	King of Prussia	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Las Vegas	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Manhattan	Knowledge	0289 - PESI, Inc.

Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Monroeville	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Plainview	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Portland	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	San Diego	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	San Francisco	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	Seattle	Knowledge	0289 - PESI, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-L01-P	6.7 (0.67)	St. Louis	Knowledge	0289 - PESI, Inc.
Evaluating the Enoxaparin Dose Used for VTE Prophylaxis in Obesity	0172-9999-14-026-L01-P	1 (0.1)	Tuscaloosa	Knowledge	0172 - Alabama Society of Health-System Pharmacists
Evaluation and Rx of the Patient with a Family History of Premature CAD	0256-0000-15-782-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Evaluation of Older and Novel Pharmacotherapies	0256-0000-14-734-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Evaluation of Updated Glycemic Goals in Adult Patients with Diabetes	0016-0000-13-130-L01-P	1 (0.1)	Chicago	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Evidence-Based Drug Therapy Update Part II	0062-9999-14-077-L01-P	3.75 (0.375)	N. Charleston	Knowledge	0062 - South Carolina College of Pharmacy
Evidence-Based Drug Therapy Update Part III	0062-9999-14-078-L01-P	3.75 (0.375)	N. Charleston	Knowledge	0062 - South Carolina College of Pharmacy
Excellence in Translational Science: Bench to Bedside	0008-9999-15-086-L01-P	2 (0.2)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Exercise Therapy in Disease Management	0826-9999-14-037-L01-P	2 (0.2)	http://ceinternational.com/et.aspx	Knowledge	0826 - MED2000, Inc.
Expanding Pharmacy-Based Pneumococcal Immunization Services	0202-0000-13-157-L04-P	1.5 (0.15)	webinar	Knowledge	0202 - American Pharmacists Association
Extended Venous Thromboembolism Treatment with the New Oral Anticoagulants	0172-9999-13-011-L01-P	1 (0.1)	Tuscaloosa	Knowledge	0172 - Alabama Society of Health-System Pharmacists

Extracorporeal Membrane Oxygenation (ECMO)	0180-0000-13-229-L01-P	1.5 (0.15)	Indianapolis	Knowledge	0180 - Pediatric Pharmacy Advocacy Group
Failure is Not an Option: New Drugs and Systems of Care	0256-0000-15-771-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Fibrinolytic Therapy in STEMI: Still The Most Common Reperfusion Strategy in the World	0256-0000-15-767-L01-P	2.75 (0.275)	Orlando	Knowledge	0256 - American Heart Association
Fifty Shades of Red: A Case-Based Approach to the Pharmacist's Management of Anticoagulation	0100-0000-15-054-L01-P	1 (0.1)	Tucson	Knowledge	0100 - Arizona Pharmacy Association
Follow up and Secondary Prevention for Patients with PVD	0453-9999-15-149-L04-P	0.25 (0.025)	Lombard	Knowledge	0453 - Amedco, LLC
From Couch to 5K: Optimizing Treatment of Patients with COPD and Peripheral Arterial Disease	0104-0000-15-030-L01-P	1 (0.1)	Albuquerque	Knowledge	0104 - New Mexico Pharmacists Association
From Hospital to Home: COPD Care Transitions along the Continuum	0845-9999-15-091-L04-P	1 (0.1)	Las Colinas	Knowledge	0845 - University of North Texas Health Science Center
From NSTEMI to Non-ST Elevation Acute Coronary Syndromes: 2015 Update	0163-0000-15-162-L01-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Game-changing Publications of 2014-2015 in Cardiology, Infectious Disease and Critical Care	0112-0000-15-222-L04-P	1.5 (0.15)	Troy	Knowledge	0112 - Michigan Pharmacists Association
Geriatric Pharmacology: Maximizing Safety & Effectiveness	0289-0000-13-082-L01-P	6.3 (0.63)	Cromwell	Knowledge	0289 - PESI, Inc.
Geriatric Pharmacology: Maximizing Safety & Effectiveness	0289-0000-13-082-L01-P	6.3 (0.63)	Trumbull	Knowledge	0289 - PESI, Inc.
Geriatric Pharmacology: Maximizing Safety & Effectiveness	0289-0000-13-082-L01-P	6.3 (0.63)	Warwick	Knowledge	0289 - PESI, Inc.
Geriatrics: Cardiology; Glaucoma; Alzheimer's Disease	0043-9999-14-006-L01-P	5 (0.5)	Caribbean Cruise	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Getting the Most Out of the Cardiac Monitor	0289-0000-13-102-L01-P	3 (0.3)	Las Vegas	Knowledge	0289 - PESI, Inc.
Getting to the Heart of the Matter: Updates in Anticoagulation Therapy and Medication Errors	0010-0000-15-007-L01-P	2 (0.2)	Greenbelt Marriott (202-427-3010)	Knowledge	0010 - Howard University College of Pharmacy
Giving Breath to COPD: A Focus on GOLD 2014	0798-0000-14-192-L01-P	1 (0.1)	www.freeCE.com	Knowledge	0798 - PharmCon, Inc.
Got Oxygen? COPD exacerbation	0134-9999-14-053-L01-P	0.5 (0.05)	Tarrytown	Knowledge	0134 - New York State Council of Health-System Pharmacists

Guideline Session: Unique Heart Failure Populations: What's Makes Them Special?	0008-9999-15-090-L01-P	1.5 (0.15)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Guidelines for Atherosclerotic Cardiovascular Disease Risk Reduction in the Diabetes Population	0053-9999-14-069-L01-P	1 (0.1)	Midwest City	Knowledge	0053 - University of Oklahoma College of Pharmacy
Guidelines Update: New Lipid/Cardiovascular Risk	0163-9999-14-060-L01-P	1 (0.1)	Hilton Head Island	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Health Benefits of Red Wine and Chocolate: Myths and Realities	0006-0000-13-106-L04-P	1 (0.1)	Marriott, Santa Ynez, CA	Knowledge	0006 - University of the Pacific, Thomas J. Long School of Pharmacy and Health Sciences
Health Literacy and Adherence Challenges for Asthma and COPD	0064-0000-15-073-L01-P	3 (0.3)	Chattanooga	Knowledge	0064 - University of Tennessee College of Pharmacy
Health Literacy and Adherence Challenges for Asthma and COPD	0064-0000-15-073-L01-P	3 (0.3)	Knoxville	Knowledge	0064 - University of Tennessee College of Pharmacy
Health Literacy and Adherence Challenges for Asthma and COPD	0064-0000-15-073-L01-P	3 (0.3)	Memphis	Knowledge	0064 - University of Tennessee College of Pharmacy
Health Literacy and Adherence Challenges for Asthma and COPD	0064-0000-15-073-L01-P	3 (0.3)	Nashville	Knowledge	0064 - University of Tennessee College of Pharmacy
Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TOPEKA	Knowledge	0751 - Institute for Natural Resources (INR)
Heart Failure	0096-0000-13-024-L01-P	1 (0.1)	TTUHSC SOP - Abilene Campus	Knowledge	0096 - Texas Tech University Health Sciences Center School of Pharmacy
Heart Failure 2015: An Update on Therapy	0119-0000-15-010-L01-P	1 (0.1)	Saint George	Knowledge	0119 - Utah Pharmacists Association
Heart Failure Overview and New Treatments	0163-9999-15-232-L01-P	1 (0.1)	Sarasota	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Heart Failure Trials: The Year in Review	0008-9999-14-056-L01-P	1.5 (0.15)	Las Vegas	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Heart Failure Update: New (and Old) Medications: Place in Therapy?	0837-9999-15-139-L01-P	1 (0.1)	Portland	Knowledge	0837 - University of New England College of Pharmacy
Heart Failure with Preserved Ejection Fraction Reloaded	0256-0000-15-806-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Heart Failure: A Review of The Proof Behind the Paradigms	0845-9999-15-052-L04-P	1 (0.1)	Tysons Corner	Knowledge	0845 - University of North Texas Health Science Center
Heart Rate Lowering in HF: Out with the Old, in with the New?	0256-0000-15-804-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Heart Transplant: Issues to Maximize Outcomes	0256-0000-15-807-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association

Hemorrhage to Hemostasis: Contemporary Issues in Anticoagulation	0016-0000-14-058-L01-P	2 (0.2)	Chicago	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Heparin-induced Thrombocytopenia: A Review of Treatment Options and Management	0179-0000-15-027-L01-P	1 (0.1)	Shreveport Convention Center, Shreveport	Knowledge	0179 - Louisiana Society of Health-System Pharmacists
High-risk PCI (percutaneous coronary intervention) and Hemodynamic Support	0845-0000-15-004-L04-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
High-risk PCI (percutaneous coronary intervention) and Hemodynamic Support	0845-0000-15-004-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	AKRON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ALBUQUERQUE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ALTAMONTE SPRINGS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ANN ARBOR	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ASHEVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ATHENS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	AUSTIN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	BLOOMINGTON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	BOWIE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	BRADENTON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	BREINIGSVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	BURR RIDGE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	CEDAR RAPIDS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	CHARLOTTE-CONCORD	Knowledge	0751 - Institute for Natural Resources (INR)

His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	COLLEGE PARK	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	COLUMBIA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	COLUMBUS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	CONCORD	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	CRYSTAL LAKE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	CULVER CITY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	DALLAS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	DAVENPORT-BETTENDORF	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	DEDHAM	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	DES MOINES	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	DUBLIN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	DURHAM	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	EAST HANOVER	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	EAST WINDSOR	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	EATONTOWN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	EDISON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	EVERETT-MUKILTEO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	EXTON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	FAIRBORN	Knowledge	0751 - Institute for Natural Resources (INR)

His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	FAIRFAX	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	FAYETTEVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	FEDERAL WAY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	FLINT	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	FORT MYERS-ESTERO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	FT MYERS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	GARDEN GROVE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	GRAND RAPIDS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	GREENVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	HAGERSTOWN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	HARRISBURG	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	HASSBROUCK HEIGHTS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	HOUSTON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	HYANNIS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	INDEPENDENCE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	KING OF PRUSSIA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	LANCASTER	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	LIVONIA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	LONG BEACH	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MANCHESTER	Knowledge	0751 - Institute for Natural Resources (INR)

His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MARIETTA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MELBOURNE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MELVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MEMPHIS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MONROEVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MONROVIA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MONTEREY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MORGANTOWN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MT. LAUREL	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MT. VERNON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	MYRTLE BEACH	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	NANUET	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	NASHVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	NEWARK	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	NORFOLK	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	NORTH CHARLESTON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	OKLAHOMA CITY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	OMAHA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ONTARIO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	OVERLAND PARK	Knowledge	0751 - Institute for Natural Resources (INR)

His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	OXNARD	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	PEABODY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	PEORIA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	PHOENIX	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	PIKESVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	PLANTATION-SUNRISE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	PORT HURON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	PORTLAND	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	POUGHKEEPS IE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	RALEIGH	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	RENTON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ROCKFORD	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ROCKVILLE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SACRAMENTO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SADDLE BROOK	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SALISBURY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SALT LAKE CITY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SAN ANTONIO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SAN DIEGO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SAN JOSE	Knowledge	0751 - Institute for Natural Resources (INR)

His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SANTA ROSA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SCHAUMBURG	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SEATTLE-LYNWOOD	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SKOKIE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SMITHTOWN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SOUTH SAN FRANCISCO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SPRINGFIELD	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ST. CLOUD	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	ST. LOUIS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	STERLING HEIGHTS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	STURBRIDGE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	SUNRISE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TACOMA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TAMPA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TINTON FALLS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TOLEDO	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TOPEKA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TREVOSE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TUCSON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	TULSA	Knowledge	0751 - Institute for Natural Resources (INR)

His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	VAN NUYS	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WALTHAM	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WATERBURY	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WEBINAR--AUSTIN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WEBINAR--AUSTIN	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WEBINAR--INR WEBSITE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WEBINAR--INRWEBSITE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WEST CHESTER	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	West Chester	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WEST PALM BEACH	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WICHITA	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WILKES-BARRE	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WILMINGTON	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WINDSOR	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WINSTON-SALEM	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	WORCESTER	Knowledge	0751 - Institute for Natural Resources (INR)
Hormonal Replacement Therapy	0113-0000-14-018-L01-P	0.75 (0.075)	Los Angeles	Knowledge	0113 - California Pharmacists Association
Hot Topics in Cardiology	0043-0000-14-030-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Hot Topics in Cardiology	0043-0000-15-048-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences

Hot Topics in Healthcare	0347-9999-15-027-L01-P	5 (0.5)	Bremerton, Harrison Medical Center	Knowledge	0347 - Foundation for Care Managemen
Hot Topics in Stroke	0256-0000-15-773-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
How Long should You Go...Managing Dyslipidemia	0136-9999-14-011-L01-P	1 (0.1)	Dewey Beach	Knowledge	0136 - New Jersey Pharmacists Association
How to Manage Diuretic Resistance: What to Do When The Fluid Won't Come Off?	0008-9999-15-095-L01-P	1 (0.1)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
How to Troubleshoot a VAD	0008-9999-15-089-L01-P	1 (0.1)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
How to Use Urine Thromboxane B2 to Select and Monitor Aspirin Therapy	0256-0000-15-802-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Hypertension and Heart Failure	0741-0000-15-021-L01-P	5 (0.5)	Kahala Coast /www.universi tylearning.co m/800940586	Knowledge	0741 - University Learning Systems, Inc.
Hypertension and Heart Failure	0741-0000-15-021-L01-P	5 (0.5)	Kahala Coast /www.universi tylearning.co m/800940586	Knowledge	0741 - University Learning Systems, Inc.
Hypertension and Vascular Medicine	0256-0000-15-814-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Hypertension Update: Making Sense of the New Guidelines	0165-0000-14-090-L01-P	1.5 (0.15)	Ft. Lauderdale	Knowledge	0165 - Florida Pharmacy Association
Hypoglycemia and Cardiovascular Disease – Lessons from Outcome Studies	0239-0000-14-109-L01-P	2 (0.2)	http://scientifi csessions.diab etes.org	Knowledge	0239 - American Diabetes Association
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to	0347-0000-13-08-L01-P	1 (0.1)	Coupeville, Whidbey General, 7:00 am	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to	0347-0000-13-08-L01-P	1 (0.1)	Hood River, Columbia River Restaurant, 6:30 pm	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to	0347-0000-13-08-L01-P	1 (0.1)	Ketchikan, Cape Fox Restaurant, 6:30 pm	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to	0347-0000-13-08-L01-P	1 (0.1)	Medical Lake, Eastern State Hospital, 12:00 pm	Knowledge	0347 - Foundation for Care Management

Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to	0347-0000-13-08-L01-P	1 (0.1)	Tacoma, Western State Hospital, 7:00 am	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to Improve Patient Outcomes	0347-0000-13-008-L01-P	1 (0.1)	Coupeville, Whidbey General Hospital, Grand Rounds	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to Improve Patient Outcomes	0347-0000-13-008-L01-P	1 (0.1)	Hood River, Columbia Gorge Hotel, Dinner CME, 6:30	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to Improve Patient Outcomes	0347-0000-13-008-L01-P	1 (0.1)	Ketchikan, Best Western Plus Landing, 6:00pm	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to Improve Patient Outcomes	0347-0000-13-008-L01-P	1 (0.1)	Medical Lake, Eastern State Hospital, Grand Rounds	Knowledge	0347 - Foundation for Care Management
Idiopathic Pulmonary Fibrosis: What the Primary Care Provider Needs to Know to Improve Patient Outcomes	0347-0000-13-008-L01-P	1 (0.1)	Tacoma, Western State Hospital, Grand Rounds, 12:0	Knowledge	0347 - Foundation for Care Management
I'm Here to Pump You Up! Overview of Medications in Heart Failure	0032-9999-14-058-L01-P	1 (0.1)	Jackson	Knowledge	0032 - University of Mississippi School of Pharmacy
Impact of Lung Cancer on Family and Social Structures	0004-9999-14-162-L04-P	0.5 (0.05)	Little Rock	Knowledge	0004 - University of Arkansas for Medical Sciences College of Pharmacy
Implementation of Pharmacist-Led Heart Failure Medication Education and Reconciliation Program	0035-9999-14-030-L04-P	0.5 (0.05)	Billings	Knowledge	0035 - Skaggs School of Pharmacy at the University of Montana
Improving Outcomes in High Risk Patients with STEMI	0256-0000-15-787-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Incorporating the Newest Therapy for Anticoagulation in Nonvalvular Atrial Fibrillation: What the Primary Care Provider Needs to Know	0347-0000-15-016-L01-P	1 (0.1)	Coupeville, Whidbey General Hospital, 360-678-5151	Knowledge	0347 - Foundation for Care Management

Incorporating the Newest Therapy for Anticoagulation in Nonvalvular Atrial Fibrillation: What the Primary Care Provider Needs to Know	0347-0000-15-016-L01-P	1 (0.1)	Hermiston, Good Shepherd Hospital, 541-667-3400	Knowledge	0347 - Foundation for Care Management
Incorporating the Newest Therapy for Anticoagulation in Nonvalvular Atrial Fibrillation: What the Primary Care Provider Needs to Know	0347-0000-15-016-L01-P	1 (0.1)	Medical Lake, Eastern State Hospital, 509-565-4800	Knowledge	0347 - Foundation for Care Management
Incorporating the Newest Therapy for Anticoagulation in Nonvalvular Atrial Fibrillation: What the Primary Care Provider Needs to Know	0347-0000-15-016-L01-P	1 (0.1)	Tacoma, Western State Hospital, 253-582-8900	Knowledge	0347 - Foundation for Care Management
Incorporating the Newest Therapy for Anticoagulation in Nonvalvular Atrial Fibrillation: What the Primary Care Provider Needs to Know	0347-0000-15-018-L01-P	1.5 (0.15)	Ketchikan, Best Western Plus Landing, 907-225-5166	Knowledge	0347 - Foundation for Care Management
Infection of Vascular Devices (Central Catheters and Cardiac devices)	0134-9999-14-015-L01-P	1 (0.1)	Buffalo	Knowledge	0134 - New York State Council of Health-System Pharmacists
Inflammation & Chronic Disease	0826-9999-14-033-L01-P	6 (0.6)	http://ceinternational.com/inf.aspx	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	ceinternational.com	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	http://ceinternational.com/inf.aspx	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	Oklahoma City	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	Richmond	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	Roanoke	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	Tulsa	Knowledge	0826 - MED2000, Inc.
Innovations in Cholesterol Management: New Medications, Guideline Controversies, and New Evidence	0741-0000-16-001-L01-P	5 (0.5)	Marco Island/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.
Innovations in Cholesterol Management: New Medications, Guideline Controversies, and New Evidence	0741-0000-16-001-L01-P	5 (0.5)	Marco Island/www.universitylearning.com/8009405860	Knowledge	0741 - University Learning Systems, Inc.

Innovations in Hypertension Management for Special Populations	0256-0000-15-781-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Innovative Care Models to Optimize the Care of Heart Failure in the Community	0036-9999-15-220-L01-P	1 (0.1)	Portland	Knowledge	0036 - Oregon State University
Inpatient Anticoagulation Services	0163-0000-13-166-L01-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Insights, Pearls, and Perspectives - An Update in the Management of Chronic Obstructive Pulmonary Disease	0106-9999-15-036-L01-P	1 (0.1)	Foxboro, MA	Knowledge	0106 - Connecticut Pharmacists Association
Internal Medicine for Primary Care Physicians: CV/Pulm/Neuro/Endo	0816-0000-15-018-L01-P	14 (1.4)	Barcelona, Spain	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care Physicians: Derm/CV/Neuro/ID	0816-0000-15-002-L01-P	14 (1.4)	St. Marteen	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care Physicians: Neuro/Endo/Cardio	0816-0000-15-032-L01-P	11 (1.1)	LAS VEGAS	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care Physicians: Optha/Neuro/CV/Sports Medicine	0816-0000-15-014-L01-P	17 (1.7)	Orlando	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care Physicians: Ortho/Cardio/Geriatrics/Pulm	0816-0000-15-026-L01-P	17 (1.7)	Kauai	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care Physicians: Pulm/Cardio/Neuro/Derm	0816-0000-15-028-L01-P	14 (1.4)	NEVIS, W.I.	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care Physicians: Pulm/ID/Vascular/Oncology	0816-0000-15-013-L01-P	17 (1.7)	Maui	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care Physicians: Rheum/Pulm/Derm/CV	0816-0000-15-022-L01-P	14 (1.4)	Washington DC	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care: Cardio/Gastro/Neuro/Psych	0816-0000-16-009-L01-P	14 (1.4)	Key West	Knowledge	0816 - Medical Education Resources, Inc.

Internal Medicine for Primary Care: Cardiovascular, Endocrinology, Neurology, Orthopedics	0816-0000-14-069-L01-P	14 (1.4)	Key West	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care: CV/Ortho/Rheum	0816-0000-13-031-L01-P	11 (1.1)	San Diego	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care: Endocrinology, Dermatology, Pulmonology Cardiovascular	0816-0000-14-068-L01-P	17 (1.7)	Kauai	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care: ID/CV/Pulm/Neuro	0816-0000-14-047-L01-P	14 (1.4)	Paris	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care: Neuro/Psych/Pulm	0816-0000-13-030-L01-P	11 (1.1)	Orlando	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care: Pulm/Psych/Endo/ID	0816-0000-13-028-L01-P	17 (1.7)	Orlando	Knowledge	0816 - Medical Education Resources, Inc.
Internal Medicine for Primary Care- Endo/Pulm/Derm/Neuro	0816-0000-13-029-L01-P	14 (1.4)	Nassau	Knowledge	0816 - Medical Education Resources, Inc.
Ischemic Heart Disease and Anti-arrhythmic Therapies	0741-0000-14-008-L01-P	5 (0.5)	Ft Lauderdale cruise/www.universitylearning.com/8	Knowledge	0741 - University Learning Systems, Inc.
Ischemic Heart Disease and Anti-arrhythmic Therapies	0741-0000-14-008-L01-P	5 (0.5)	Ft Lauderdale cruise/www.universitylearning.com/8	Knowledge	0741 - University Learning Systems, Inc.
Ischemic Heart Disease and Anti-arrhythmic Therapies	0741-0000-15-022-L01-P	5 (0.5)	Kahala Coast/www.universitylearning.com/800940586	Knowledge	0741 - University Learning Systems, Inc.
Ischemic Heart Disease and Anti-arrhythmic Therapies	0741-0000-15-022-L01-P	5 (0.5)	Kahala Coast/www.universitylearning.com/800940586	Knowledge	0741 - University Learning Systems, Inc.
Ischemic Heart Disease: Drugs, Devices and Systems of Care	0256-0000-14-738-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
JNC 8: Comparison and Review of New Hypertension Guidelines	0165-0000-14-073-L01-P	1.5 (0.15)	Destin	Knowledge	0165 - Florida Pharmacy Association
JNC 8: Comparison and Review of New Hypertension Guidelines	0165-0000-14-084-L01-P	1.5 (0.15)	Sea	Knowledge	0165 - Florida Pharmacy Association

Joint AHA/American Society of Hypertension Session: Can We Identify Response Markers to Antihypertensive Drugs?	0256-0000-14-735-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Joint AHA/Brazilian Society of Cardiology Session: Hypertension Treatment	0256-0000-14-736-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Joint AHA/Chinese Society of Cardiology Session: Hypertension Management in China---the Gap Between Guideline and Practice	0256-0000-14-719-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Joint AHA/Israel Heart Society Session: Advances in Acute Coronary Syndromes	0256-0000-14-737-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Joint AHA/Mexican Society of Cardiology Session: New Challenges in Complex Cardiovascular Intervention	0256-0000-14-720-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Keep Bleeding: A review of the clotting Cascade and Current Anticoagulants	0032-0000-16-007-L01-P	0.5 (0.05)	Jackson	Knowledge	0032 - University of Mississippi School of Pharmacy
Keep the Blood Flowing: An update on Antithrombotic Medications	0837-0000-13-035-L01-P	1 (0.1)	Portland	Knowledge	0837 - University of New England College of Pharmacy
Keynote: New Oral Anticoagulants--Their Benefits in Stroke Prevention	0022-0000-14-077-L01-P	0.75 (0.075)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy
Kidney Disease and Heart Failure: Where Medication Efficacy and Safety Collide	0016-9999-15-113-L01-P	0.5 (0.05)	Minneapolis	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Kidney Transplantation 2015	0016-9999-15-019-L01-P	7.5 (0.75)	Dallas	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Lab Order & Evaluation for the Pharmacist	0092-0000-14-038-L04-P	3 (0.3)	Fort Lauderdale/ (954)262-1328	Knowledge	0092 - Nova Southeastern University College of Pharmacy
Late Breakers in Pharmacotherapy, I	0217-0000-15-117-L01-P	1.5 (0.15)	San Fransico, www.accp.com/gc	Knowledge	0217 - American College of Clinical Pharmacy
Late Breakers in Pharmacotherapy, I	0217-0000-15-117-L01-P	1.5 (0.15)	San Fransico, www.accp.com/gc	Knowledge	0217 - American College of Clinical Pharmacy

Let's Review the 2013 ACCF/AHA Practice Guidelines for the Management of Systolic Heart Failure	0163-9999-14-261-L01-P	1 (0.1)	Ft. Myers	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Lifestyle Management in patients with or at risk for cardiovascular disease	0096-0000-13-023-L01-P	1 (0.1)	TTHSC SOP - Abilene Campus	Knowledge	0096 - Texas Tech University Health Sciences Center School of Pharmacy
Lipid Guidelines	0163-9999-14-154-L01-P	1 (0.1)	Ft. Myers	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Lipid Management: where are we now?	0001-0000-14-018-L01-P	1 (0.1)	Auburn	Knowledge	0001 - Auburn University Harrison School of Pharmacy
Lipid Management: where are we now?	0001-0000-14-018-L01-P	1 (0.1)	Birmingham	Knowledge	0001 - Auburn University Harrison School of Pharmacy
Lipid Management: where are we now?	0001-0000-14-018-L01-P	1 (0.1)	Mobile	Knowledge	0001 - Auburn University Harrison School of Pharmacy
Little Boy Blue and What It Means to You: Pediatric Cardiology Update	0845-0000-15-003-L04-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
Little Boy Blue and What It Means to You: Pediatric Cardiology Update	0845-0000-15-003-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Living Donation is Safe: Fact or Fiction?	0453-9999-15-049-L04-P	1.5 (0.15)	Philadelphia	Knowledge	0453 - Amedco, LLC
Long-Term Cardiovascular Toxicity After Cancer Therapy in Children and Young Adults: Challenges and Opportunities	0256-0000-14-729-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Love It or Lev It: Reviewing Albuterol vs Levalbuterol	0172-9999-14-001-L01-P	1 (0.1)	Tuscaloosa	Knowledge	0172 - Alabama Society of Health-System Pharmacists
LungForce: Addressing the Impact of Lung Disease on Women	0004-9999-14-160-L01-P	0.75 (0.075)	Little Rock	Knowledge	0004 - University of Arkansas for Medical Sciences College of Pharmacy
Making Healthy Choices – Rethink Your Drink	0027-0000-15-075-L04-P	1 (0.1)	Boston	Knowledge	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
Management of acute CHF; new issues and insights	0163-9999-14-033-L01-P	1 (0.1)	Weston	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Management of Acute Decompensated Heart Failure	0043-0000-15-045-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Management of Acute Decompensated Heart Failure	0377-0000-14-013-L01-P	1 (0.1)	Columbia University Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy

Management of Acute Decompensated Heart Failure	0377-0000-14-013-L01-P	1 (0.1)	Weill Cornell Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
Mineral-Vascular Disorders: Insights into Chronic Kidney Disease and Cardiovascular	0016-9999-13-035-L01-P	1.5 (0.15)	Orlando http://www.kidney.org	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Management of Bone-Mineral-Vascular Disorders: Insights into Chronic Kidney Disease and Cardiovascular Disease	0016-9999-13-035-L01-P	1.5 (0.15)	Orlando http://www.kidney.org	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Management of Cardiovascular Disease	0256-0000-14-716-L01-P	1.75 (0.175)	Chicago	Knowledge	0256 - American Heart Association
Management of Diuretic Resistance in Heart Failure Patients	0857-9999-15-062-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Management of Heparin Induced Thrombocytopenia	0163-9999-13-243-L01-P	2 (0.2)	Pembroke Pines	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Management of Left Ventricular Assist Device Thrombosis: My Heart [Ware] will go on, Mate	0857-9999-15-061-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Management of Pulmonary Arterial Hypertension (PAH)	0163-9999-16-024-L01-P	1 (0.1)	Tallahassee	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Management of the Hypercoagulable Patient. The Pharmacists Perspective.	0134-9999-13-184-L01-P	2 (0.2)	Cheektowaga	Knowledge	0134 - New York State Council of Health-System Pharmacists
Management of Venous Thromboembolism: When Anticoagulation Alone Is Not Enough	0256-0000-14-728-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Managing Cholesterol in Our Older Adult Patients: New Guidelines, New Approaches?	0036-9999-14-126-L01-P	1 (0.1)	Portland	Knowledge	0036 - Oregon State University
Managing Encounters of the Southwest	0100-0000-15-020-L04-P	1.5 (0.15)	Tucson	Knowledge	0100 - Arizona Pharmacy Association
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	Indianapolis/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	Indianapolis/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	Las Vegas/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums

Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	Las Vegas/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	San Francisco/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	San Francisco/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-15-503-L01-P	1.5 (0.15)	Las Vegas	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-15-503-L01-P	1.5 (0.15)	Philadelphia	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-15-503-L01-P	1.5 (0.15)	San Francisco	Knowledge	0263 - Contemporary Forums
Managing Hypertriglyceridemia	0045-0000-14-029-L01-P	1 (0.1)	Albany/www.acphs.edu/518-694-7231	Knowledge	0045 - Albany College of Pharmacy and Health Sciences
Managing Hypertriglyceridemia	0045-0000-14-029-L01-P	1 (0.1)	Albany/www.acphs.edu/518-694-7231	Knowledge	0045 - Albany College of Pharmacy and Health Sciences
Managing Hyponatremia in Cardiorenal Syndromes	0016-9999-13-048-L01-P	1.5 (0.15)	Orlando http://www.kidney.org	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Managing Hyponatremia in Cardiorenal Syndromes	0016-9999-13-048-L01-P	1.5 (0.15)	Orlando http://www.kidney.org	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Managing the Emergency/Cardiogenic Shock Cardiac Surgery Patient	0256-0000-15-768-L01-P	2.5 (0.25)	Orlando	Knowledge	0256 - American Heart Association
Managing VAD Complications	0008-9999-15-091-L01-P	1.5 (0.15)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Managing Venous Thromboembolism and Antithrombotic Therapies in 2014	0217-9999-14-070-L01-P	1 (0.1)	Indianapolis	Knowledge	0217 - American College of Clinical Pharmacy
Medical Conundrum	0163-9999-15-058-L01-P	1 (0.1)	Tallahassee	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Medical Management of Patients Receiving Anticoagulant and Antiplatelet Therapy	0053-9999-13-029-L01-P	1 (0.1)	Tulsa	Knowledge	0053 - University of Oklahoma College of Pharmacy

Medicating the bionic patient: A review of mechanical cardiovascular support devices in critically ill patients and the pharmacotherapy associated with their use	0167-0000-13-016-L04-P	1 (0.1)	Salt Lake City	Knowledge	0167 - Utah Society of Health-System Pharmacists
Mineralocorticoid Receptor Antagonists in Heart Failure: Are They for Everyone?	0256-0000-14-717-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Mission Lifeline STEMI and Cardiac Emergencies Conference	0256-0000-15-751-L01-P	6.25 (0.625)	Alexandria	Knowledge	0256 - American Heart Association
Monitoring of Novel Oral Anticoagulants: Current Recommendations, Literature and Future Directions	0857-9999-15-036-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Montana Diabetes Conference 2013: Full Spectrum Diabetes Care	0035-9999-13-018-L01-P	5 (0.5)	Billings	Knowledge	0035 - Skaggs School of Pharmacy at the University of Montana
Much More than an Aspirin: Acute Coronary Syndrome	0011-0000-15-036-L04-P	1.5 (0.15)	Jacksonville/ 850.599.3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
Multidisciplinary Care of the Complex Cardiac Patients and Panel Discussion	0453-9999-15-150-L04-P	0.45 (0.045)	Lombard	Knowledge	0453 - Amedco, LLC
Navigating the 2013 ACC/AHA Guidelines on the Treatment of Blood Cholesterol	0280-0000-14-011-L01-P	1 (0.1)	Portland	Knowledge	0280 - American Health Resources
New 2013 ACC/AHA Lipid Guidelines: A Paradigm Shift	0104-0000-14-048-L04-P	1 (0.1)	Albuquerque	Knowledge	0104 - New Mexico Pharmacists Association
New Advances and Science in the Management of Chronic Obstructive Pulmonary Disease (COPD)	0106-9999-13-025-L01-P	1 (0.1)	Mashantucket	Knowledge	0106 - Connecticut Pharmacists Association
New and Emerging Anticoagulants	0278-0000-14-008-L01-P	1 (0.1)	Williamsburg	Knowledge	0278 - Virginia Pharmacists Association
New Anticoagulants & Bleed Management	0173-0000-14-015-L01-P	1 (0.1)	Sun Valley www.ishp.shu tlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
New Anticoagulants & Bleed Management	0173-0000-14-015-L01-P	1 (0.1)	Sun Valley www.ishp.shu tlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
New anticoagulants in Cardiovascular diseases	0096-0000-13-022-L01-P	1 (0.1)	TTUHSC SOP - Abilene Campus	Knowledge	0096 - Texas Tech University Health Sciences Center School of Pharmacy
New Anticoagulants: Who What When and Why	0036-9999-15-202-L01-P	1 (0.1)	Sunriver	Knowledge	0036 - Oregon State University

New Anticoagulants: Who, What, Where, When, and Why	0036-9999-15-101-L01-P	1.5 (0.15)	Eugene	Knowledge	0036 - Oregon State University
New Cardiovascular Guidelines: Implications for Pharmacy Practice	0067-0000-14-014-L01-P	1 (0.1)	Austin, Texas	Knowledge	0067 - University of Texas at Austin College of Pharmacy
New Concepts in the Pathophysiology of HFpEF	0008-9999-15-088-L01-P	1.5 (0.15)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
New Frontiers in Cardiogenic Shock	0256-0000-15-788-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
New Goals and Approaches to the Management of Hypertension and Dyslipidemia	0217-9999-14-077-L01-P	1 (0.1)	Memphis	Knowledge	0217 - American College of Clinical Pharmacy
New Guidelines in Cardiology: JNC 8, Cholesterol and More	0175-0000-14-008-L01-P	1 (0.1)	Waukesha	Knowledge	0175 - Pharmacy Society of Wisconsin
New Hypertension Guidelines : The Wait is Over!	0043-0000-14-031-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
New Investigator Award/Lecture—Resistant Hypertension: Determinants, Outcomes and Approaches for Blood Pressure Intransigence	0217-0000-15-177-L01-P	0.5 (0.05)	San Francisco www.accp.com/gc	Knowledge	0217 - American College of Clinical Pharmacy
New Investigator Award/Lecture—Resistant Hypertension: Determinants, Outcomes and Approaches for Blood Pressure Intransigence	0217-0000-15-177-L01-P	0.5 (0.05)	San Francisco www.accp.com/gc	Knowledge	0217 - American College of Clinical Pharmacy
New Investigator Lecture—Interleukin-1 blockade in Cardiovascular Disease	0217-0000-13-163-L01-P	1 (0.1)	Albuquerque, www.accp.com/am	Knowledge	0217 - American College of Clinical Pharmacy
New Investigator Lecture—Interleukin-1 blockade in Cardiovascular Disease	0217-0000-13-163-L01-P	1 (0.1)	Albuquerque, www.accp.com/am	Knowledge	0217 - American College of Clinical Pharmacy
New Oral Anticoagulants	0837-9999-15-064-L01-P	1 (0.1)	Augusta	Knowledge	0837 - University of New England College of Pharmacy
New Oral Anticoagulants	0837-9999-15-126-L01-P	1 (0.1)	Newark	Knowledge	0837 - University of New England College of Pharmacy
New Oral Anticoagulants and Stress Ulcer Prophylaxis and the Risks Associated with PPIs	0134-9999-14-008-L01-P	2 (0.2)	Albany	Knowledge	0134 - New York State Council of Health-System Pharmacists
New PCSK9 Cholesterol Drugs on the Horizon	0217-9999-15-109-L01-P	1 (0.1)	Memphis	Knowledge	0217 - American College of Clinical Pharmacy

New Strategies for the Prevention and Treatment of Venothromboembolism (VTE) and the Complications of Deep Vein Thrombosis and Pulmonary Embolisms	0011-0000-13-034-L04-P	1.5 (0.15)	Orlando/850-599-3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences
New Therapeutic Strategies for Atherosclerosis	0256-0000-15-766-L01-P	2.5 (0.25)	Orlando	Knowledge	0256 - American Heart Association
New Therapies for Heart Failure: a Breakthrough Therapy and "Funny" Drug	0217-9999-15-175-L01-P	1 (0.1)	Memphis	Knowledge	0217 - American College of Clinical Pharmacy
New Treatment for an Old Disease: Updates on Heart Failure Pharmacotherapy	0217-9999-15-187-L01-P	1 (0.1)	Albany	Knowledge	0217 - American College of Clinical Pharmacy
New Treatment Options in Heart Failure: Implications for Clinical Practice	0256-0000-15-815-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Next Innovations for Heart Failure	0256-0000-14-712-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Non-ST Elevation Acute Coronary Syndromes: Insights from the 2014 ACC/AHA Guidelines Part I – Epidemiology, Pathophysiology, Diagnostic Dilemmas and Risk Stratification of Patients with NSTEMI-ACS	0256-0000-15-819-L01-P	1 (0.1)	learn.heart.org	Knowledge	0256 - American Heart Association
North Dakota Stroke and Cardiac System Conference	0256-0000-15-757-L01-P	9.25 (0.925)	Bismarck	Knowledge	0256 - American Heart Association
Novel Anticoagulants	0837-9999-15-015-L01-P	1 (0.1)	Freeport	Knowledge	0837 - University of New England College of Pharmacy
Novel Anticoagulants and Their Reversal Agents	0837-9999-14-045-L01-P	1 (0.1)	Dover	Knowledge	0837 - University of New England College of Pharmacy
Novel Anticoagulants in the Elderly	0009-9999-14-019-L01-P	1 (0.1)	Plantsville	Knowledge	0009 - University of Connecticut School of Pharmacy
Novel Anticoagulants: What Have We Learned in 5 Years?	0280-0000-15-085-L01-P	1.5 (0.15)	Westford	Knowledge	0280 - American Health Resources
Novel Anticoagulation Medications - What the Pharmacist Needs to Know	0113-0000-15-016-L04-P	1.25 (0.125)	Anaheim	Knowledge	0113 - California Pharmacists Association
Novel Antithrombotic Medications	0837-9999-14-086-L01-P	1 (0.1)	Bangor	Knowledge	0837 - University of New England College of Pharmacy
Novel Genes Related to CAD and Risk Factors	0256-0000-14-723-L01-P	1 (0.1)	Chicago	Knowledge	0256 - American Heart Association

Novel Medical Therapies in Heart Failure	0053-9999-15-061-L01-P	1 (0.1)	Tusla	Knowledge	0053 - University of Oklahoma College of Pharmacy
Novel Oral Anticoagulant Agents: An Update in Pharmacotherapy	0064-0000-13-030-L01-P	1 (0.1)	Johnson City	Knowledge	0064 - University of Tennessee College of Pharmacy
Novel Oral Anticoagulants Versus Warfarin	0165-0000-14-089-L01-P	1.5 (0.15)	Ft. Lauderdale	Knowledge	0165 - Florida Pharmacy Association
Novel Oral Antithrombotics & Their Emergent Reversal Strategies	0130-0000-15-030-L01-P	1.5 (0.15)	Coeur d'Alene	Knowledge	0130 - Washington State Pharmacy Association
NPA - Cardiovascular Diseases	0230-9999-14-011-L01-P	4 (0.4)	Tampa	Knowledge	0230 - USF Health
Nutritional Supplements A-Z	0826-9999-14-013-L01-P	3 (0.3)	http://ceinternational.com/nutsupod.aspx	Knowledge	0826 - MED2000, Inc.
Obesity Guideline Review: Top 10 Items to Know	0001-0000-14-020-L01-P	1 (0.1)	Auburn	Knowledge	0001 - Auburn University Harrison School of Pharmacy
Obesity Guideline Review: Top 10 Items to Know	0001-0000-14-020-L01-P	1 (0.1)	Birmingham	Knowledge	0001 - Auburn University Harrison School of Pharmacy
Obesity Guideline Review: Top 10 Items to Know	0001-0000-14-020-L01-P	1 (0.1)	Mobile	Knowledge	0001 - Auburn University Harrison School of Pharmacy
Obesity Management: New Insight & Novel Interventions	0372-0000-13-014-L01-P	1 (0.1)	www.rxschool.com	Knowledge	0372 - Rx School
Old Versus New: Heart Failure Therapy	0256-0000-14-718-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Opiates and Hormone Imbalances: Treatment with Compounded Hormones	0201-0000-14-077-L04-P	1.5 (0.15)	Tulsa	Knowledge	0201 - American College of Apothecaries, Inc.
Optimal Anticoagulation Therapy: A Prescription for Improvement	0022-9999-15-096-L01-P	1 (0.1)	Columbia	Knowledge	0022 - University of Kentucky College of Pharmacy
Optimal Anticoagulation Therapy: A Prescription for Improvement	0022-9999-15-096-L01-P	1 (0.1)	Kansas City	Knowledge	0022 - University of Kentucky College of Pharmacy
Optimal Anticoagulation Therapy: A Prescription for Improvement	0022-9999-15-096-L01-P	1 (0.1)	Walnut Creek	Knowledge	0022 - University of Kentucky College of Pharmacy
Optimizing COPD Management: An Update on Current Treatment and the Role of the Pharmacist	0064-0000-15-066-L01-P	1 (0.1)	Nashville	Knowledge	0064 - University of Tennessee College of Pharmacy
Oral Anticoagulants: Comparing and Contrasting the New Agents	0401-0000-13-056-L01-P	1 (0.1)	www.cedrugstorenews.com	Knowledge	0401 - Drug Store News
Oral Anticoagulation in 2014: Three's a Crowd	0837-9999-14-107-L01-P	1 (0.1)	Portland	Knowledge	0837 - University of New England College of Pharmacy

Oral Antiplatelet Agents After Drug-Eluting Stents: Which Agent and for How Long?	0256-0000-14-742-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
OSHP 2015 Annual Meeting; Residency Project Pearls - Session 3	0053-9999-15-021-L01-P	1 (0.1)	Oklahoma City	Knowledge	0053 - University of Oklahoma College of Pharmacy
OSHP Annual Meeting: Residency Project Pearls (1)	0053-9999-14-010-L01-P	1 (0.1)	Oklahoma City	Knowledge	0053 - University of Oklahoma College of Pharmacy
OSHP Annual Meeting: Residency Project Pearls (2)	0053-9999-14-012-L01-P	1 (0.1)	Oklahoma City	Knowledge	0053 - University of Oklahoma College of Pharmacy
Overcoming Clopidogrel Resistance	0857-9999-16-083-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Overlap Therapy and Venous Thromboembolism (VTE) Core Measures	0163-9999-15-240-L01-P	1 (0.1)	Vero Beach	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Overview of New Cholesterol Guidelines: Controversies Surrounding Care	0510-0000-14-027-L01-P	1 (0.1)	Detroit	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
Overview of the Diagnosis and Management of COPD	0163-9999-15-001-L01-P	1 (0.1)	Ft. Myers	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Panel Discussion	0453-9999-15-145-L04-P	0.25 (0.025)	Lombard	Knowledge	0453 - Amedco, LLC
PCSK9 Inhibitors: An Assessment of their Mechanism and Potential Role in Patient Care	0009-0000-15-070-L01-P	1 (0.1)	http://pharmacy.uconn.edu/academics/ce/ce-finale/	Knowledge	0009 - University of Connecticut School of Pharmacy
PCSK9 Inhibitors: An Assessment of their Mechanism and Potential Role in Patient Care	0009-0000-15-070-L01-P	1 (0.1)	Rocky Hill	Knowledge	0009 - University of Connecticut School of Pharmacy
Pediatric Fundamental Critical Care Support	0230-0000-15-019-L05-P	12.25 (1.225)	Tampa	Knowledge	0230 - USF Health
Perioperative Management of Patients on Novel Oral Anticoagulants	0857-9999-14-016-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
PET Heart and Bone Imaging - A General Review of Imaging Agents	0165-0000-13-097-L04-P	1 (0.1)	Orlando	Knowledge	0165 - Florida Pharmacy Association
Pharmacists and student pharmacists interested in learning about: The use of enoxaparin in End Stage Renal Disease (ESRD)	0857-9999-15-039-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Pharmacogenetics of Heart Failure and Transplant: Additive or Reductive	0008-9999-15-099-L01-P	1.25 (0.125)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences

Pharmacogenomics, Acute Coronary Syndrome, Parkinson's Disease	0854-0000-15-004-L01-P	3 (0.3)	Tampa/www.seniorcarece.com	Knowledge	0854 - Florida Association of Consultant Pharmacists
Pharmacogenomics, Acute Coronary Syndrome, Parkinson's Disease	0854-0000-15-004-L01-P	3 (0.3)	Tampa/www.seniorcarece.com	Knowledge	0854 - Florida Association of Consultant Pharmacists
Pharmacologic Management of Bleeding Complications in Anticoagulated Patients	0064-0000-13-039-L01-P	1 (0.1)	Murfreesboro	Knowledge	0064 - University of Tennessee College of Pharmacy
Pharmacologic Management of Bleeding Complications in Anticoagulated Patients	0064-0000-13-039-L01-P	1 (0.1)	Nashville	Knowledge	0064 - University of Tennessee College of Pharmacy
Pharmacologic Options and Drug Selection Considerations for the Prevention of Thrombotic Cardiovascular Events	0798-0000-15-141-L01-P	1 (0.1)	www.freeCE.com	Knowledge	0798 - PharmCon, Inc.
Pharmacological Stress Test Agents	0171-9999-14-011-L01-P	1 (0.1)	Myrtle Beach	Knowledge	0171 - South Carolina Pharmacy Association
Pharmacology of Resistant Hypertension	0163-0000-13-165-L01-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Pharmacology: A Surgeon's Perspective	0163-9999-15-211-L01-P	2 (0.2)	Tallahassee	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Pharmacotherapeutic Treatment Options for Pediatric Pulmonary Hypertension	0062-9999-14-055-L01-P	1 (0.1)	Columbia (Palmetto Health Children's Hospital)	Knowledge	0062 - South Carolina College of Pharmacy
Pharmacotherapy for Pulmonary Hypertension in Adults	0036-9999-15-301-L01-P	1 (0.1)	Portland	Knowledge	0036 - Oregon State University
Pharmacy Student Competition-College Bowl	0136-0000-13-050-L04-P	1.5 (0.15)	Atlantic City	Knowledge	0136 - New Jersey Pharmacists Association
Pharmacy to the Rescue: The Role of Pharmacy in the Management of Medical Emergencies	0837-9999-15-113-L01-P	2 (0.2)	South Portland	Knowledge	0837 - University of New England College of Pharmacy
Physical Activity and Diabetes: How to Introduce Your Patients to Their New Best Friend	0119-0000-16-001-L01-P	1 (0.1)	Salt Lake City	Knowledge	0119 - Utah Pharmacists Association
Physiology of Aging	0059-9999-15-010-L01-P	0.58 (0.058)	Hyatt Regency LA 909-706-3826	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
PL VOICES: Improving Outcomes in Heart Failure Patients	0422-0000-14-521-L01-P	1 (0.1)	www.pharmacistsletter.com	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center

Post-Op Congenital Heart Disease	0180-0000-13-235-L01-P	1.5 (0.15)	Indianapolis	Knowledge	0180 - Pediatric Pharmacy Advocacy Group
PPHN: Update on Pathophysiology and Treatment	0263-0000-13-405-L01-P	1.5 (0.15)	Washington/Contemporary forums.com/800 377-7707	Knowledge	0263 - Contemporary Forums
PPHN: Update on Pathophysiology and Treatment	0263-0000-13-405-L01-P	1.5 (0.15)	Washington/Contemporary forums.com/800 377-7707	Knowledge	0263 - Contemporary Forums
Practice Strategies for the Treatment of PPHN	0263-0000-15-541-L01-P	0.75 (0.075)	http://www.contemporaryforumsonline.com	Knowledge	0263 - Contemporary Forums
Practice Strategies for the Treatment of PPHN	0263-0000-15-541-L01-P	0.75 (0.075)	Scottsdale/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Practice Strategies for the Treatment of PPHN	0263-0000-15-541-L01-P	0.75 (0.075)	Scottsdale/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Preoperative Assessment in the Older Adult	0059-9999-13-115-L01-P	0.75 (0.075)	Los Angeles Airport Marriott, LA. CA icinfo@ucla.e	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Preoperative Assessment in the Older Adult	0059-9999-13-115-L01-P	0.75 (0.075)	Marina Del Rey,310-312-0531, www.geronet.ucla.edu/	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Preoperative Assessment in the Older Adult	0059-9999-13-115-L01-P	0.75 (0.075)	Marina Del Rey,310-312-0531, www.geronet.ucla.edu/	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Preoperative use of beta blockers in coronary artery bypass graft surgery	0857-9999-14-030-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Preventing Cardiovascular Disease	0045-0000-14-027-L01-P	1 (0.1)	Albany/www.acphs.edu/518-694-7231	Knowledge	0045 - Albany College of Pharmacy and Health Sciences
Preventing Cardiovascular Disease	0045-0000-14-027-L01-P	1 (0.1)	Albany/www.acphs.edu/518-694-7231	Knowledge	0045 - Albany College of Pharmacy and Health Sciences
Prevention of Atherosclerotic Cardiovascular Disease: Guideline Updates on Blood Pressure and Cholesterol Control	0217-9999-14-153-L01-P	1 (0.1)	Rochester	Knowledge	0217 - American College of Clinical Pharmacy
Prevention of Cardiac Disease	0113-0000-14-022-L04-P	0.5 (0.05)	Los Angeles	Knowledge	0113 - California Pharmacists Association

Prevention of Postoperative Atrial Fibrillation	0163-9999-14-241-L01-P	1 (0.1)	Jacksonville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Prevention of Stroke	0113-0000-14-023-L04-P	0.5 (0.05)	Los Angeles	Knowledge	0113 - California Pharmacists Association
Prevention of Thromboembolism	0113-0000-14-024-L04-P	0.5 (0.05)	Los Angeles	Knowledge	0113 - California Pharmacists Association
Prominent Clinical Trial Review	0120-9999-15-002-L04-P	1.5 (0.15)	Ft. Wayne	Knowledge	0120 - Pharmacists Education Foundation
Pulmonary Arterial Hypertension	0179-9999-14-026-L04-P	1 (0.1)	Xavier University, New Orleans	Knowledge	0179 - Louisiana Society of Health-System Pharmacists
Pulmonary Arterial Hypertension	0377-0000-14-005-L01-P	1 (0.1)	Columbia University Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
Pulmonary Arterial Hypertension	0377-0000-14-005-L01-P	1 (0.1)	Weill Cornell Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
Pulmonary Arterial Hypertension: Balancing Patient Needs with Pharmacological Complexity	0221-0000-15-264-L01-P	1.5 (0.15)	New Orleans	Knowledge	0221 - Pro CE, Inc.
Pulmonary Arterial Hypertension: Balancing Patient Needs with Pharmacological Complexity	0221-0000-15-264-L01-P	1.5 (0.15)	www.ProCE.com (via GoToWebinar)	Knowledge	0221 - Pro CE, Inc.
Pulmonary Hypertension	0180-0000-13-212-L01-P	1.5 (0.15)	Indianapolis	Knowledge	0180 - Pediatric Pharmacy Advocacy Group
Pulmonary Update	0104-0000-13-032-L01-P	1 (0.1)	Albuquerque	Knowledge	0104 - New Mexico Pharmacists Association
Putting the Self Back in Self-Care: Innovative Strategies to Improve Heart Failure Self-Care	0008-9999-15-093-L01-P	1.5 (0.15)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Rate and Rhythm Control: The Role of Ablation	0022-0000-14-080-L01-P	0.5 (0.05)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy
Recent Additions to the Drug Therapy Arsenal: 2014 FDA Approvals	0372-0000-15-002-L04-P	2 (0.2)	www.rxschool.com	Knowledge	0372 - Rx School
Reciprocal Extrapolation: Individualizing Care Using Population Data	0256-0000-14-726-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Recognition and Management of Arrhythmias in the Fetus and Newborn	0263-0000-15-578-L01-P	0.75 (0.075)	San Diego/www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Recognition and Management of Arrhythmias in the Fetus and Newborn	0263-0000-15-578-L01-P	0.75 (0.075)	San Diego/www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Recognition and Management of Arrhythmias in the Fetus and Newborn	0263-0000-15-578-L01-P	0.75 (0.075)	www.contemporaryforumsonline.com	Knowledge	0263 - Contemporary Forums

Reducing the Risk of Stroke in the Management of Atrial Fibrillation	0845-0000-16-001-L04-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
Reducing the Risk of Stroke in the Management of Atrial Fibrillation	0845-0000-16-001-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Reemerging Autonomic Modulatory Therapy for Hypertension	0256-0000-14-714-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Refining the Treatment of Pulmonary Hypertension: Beyond iNO	0263-0000-14-437-L01-P	1 (0.1)	Boston/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Refining the Treatment of Pulmonary Hypertension: Beyond iNO	0263-0000-14-437-L01-P	1 (0.1)	Boston/http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Relaxation Therapy for Health	0826-9999-14-050-L01-P	2 (0.2)	http://ceinternational.com/vegdiat.aspx	Knowledge	0826 - MED2000, Inc.
Residency Project Pearls (1)	0053-9999-13-025-L01-P	1 (0.1)	Tulsa	Knowledge	0053 - University of Oklahoma College of Pharmacy
Resistance Exercise: Health Benefits and Medical Applications	0280-0000-15-045-L01-P	2 (0.2)	Plymouth	Knowledge	0280 - American Health Resources
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	Las Vegas/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	Las Vegas/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	San Francisco/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	San Francisco/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	Washington/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	Washington/www.cforums.com/925 828-7100	Knowledge	0263 - Contemporary Forums

Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	Indianapolis/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	Indianapolis/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	Las Vegas/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	Las Vegas/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	San Francisco/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	San Francisco/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-15-516-L01-P	2.5 (0.25)	Las Vegas	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-15-516-L01-P	2.5 (0.25)	Philadelphia	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-15-516-L01-P	2.5 (0.25)	San Francisco	Knowledge	0263 - Contemporary Forums
Reversal of Novel Oral Anticoagulants	0857-9999-14-013-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Reversal Strategies for New Oral Anticoagulants	0228-0000-14-120-L01-P	1 (0.1)	Young Harris	Knowledge	0228 - Georgia Society of Health-System Pharmacists, Inc.
Reversal Strategies for Non-Warfarin Oral Anticoagulation	0837-9999-15-080-L01-P	1 (0.1)	Portland	Knowledge	0837 - University of New England College of Pharmacy
Reversal strategies for the novel oral anticoagulants: Making the best of what's around	0857-9999-14-032-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Reversing Anticoagulant/Antiplatelet Related Bleeding in the ER	0130-0000-14-070-L01-P	1.5 (0.15)	Cle Elum	Knowledge	0130 - Washington State Pharmacy Association
Reversing the new anticoagulants: back to the future?	0106-0000-15-081-L01-P	1 (0.1)	Plantsville, CT	Knowledge	0106 - Connecticut Pharmacists Association

Review of available anticoagulation agents literature and the cancer population	0857-9999-14-029-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Review of Hypertension and Dyslipidemia Guidelines- Implications for Pharmacists	0027-0000-15-058-L01-P	1 (0.1)	Norwood	Knowledge	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
Review of Prominant Articles Published in 2013	0120-9999-14-002-L01-P	1.5 (0.15)	Ft. Wayne	Knowledge	0120 - Pharmacists Education Foundation
Review of the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults	0163-9999-14-017-L01-P	1 (0.1)	Jacksonville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Rural Minnesota 2014 Mission Lifeline STEMI Conference	0256-0000-14-700-L01-P	5.75 (0.575)	Alexandria	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: Abstract Poster Session I	0256-0000-15-769-L01-P	1 (0.1)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: Abstract Poster Session II	0256-0000-15-777-L01-P	1 (0.1)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: Abstract Poster Session III	0256-0000-15-796-L01-P	1 (0.1)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: eAbstract Session - Chronic and Acute Ischemic Heart Disease III	0256-0000-15-800-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: eAbstract Session - Hypertension I	0256-0000-15-770-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: eAbstract Session - Hypertension II	0256-0000-15-786-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: eAbstract Session - Stroke I	0256-0000-15-780-L01-P	0.75 (0.075)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: eAbstract Session - Stroke II	0256-0000-15-797-L01-P	0.75 (0.075)	Orlando	Knowledge	0256 - American Heart Association
Scientific Sessions 2015: eAbstract Session - Stroke III	0256-0000-15-812-L01-P	0.75 (0.075)	Orlando	Knowledge	0256 - American Heart Association
Seminar by the Sea, Day Two: Headline Topics in Pharmacy Practice	0060-0000-15-007-L04-P	6.25 (0.625)	Newport	Knowledge	0060 - University of Rhode Island College of Pharmacy
Session 1. Hypertension and Heart Failure	0741-0000-14-007-L01-P	5 (0.5)	Ft Lauderdale cruise/www.universitylearning.com/80	Knowledge	0741 - University Learning Systems, Inc.

Session 1. Hypertension and Heart Failure	0741-0000-14-007-L01-P	5 (0.5)	Ft Lauderdale cruise/www.u niversitylearni ng.com/80	Knowledge	0741 - University Learning Systems, Inc.
Session 3. Cardiovascular Medication Management: Bringing It All Together	0741-0000-14-009-L01-P	5 (0.5)	Ft Lauderdale cruise/www.u niversitylearni ng.com/8	Knowledge	0741 - University Learning Systems, Inc.
Session 3. Cardiovascular Medication Management: Bringing It All Together	0741-0000-14-009-L01-P	5 (0.5)	Ft Lauderdale cruise/www.u niversitylearni ng.com/8	Knowledge	0741 - University Learning Systems, Inc.
Sex Differences in Hypertension	0256-0000-15-805-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Shifting Paradigms in the Management of Heart Failure and Heart Failure in Special Populations, Special Considerations with Oral Anticoagulants, Antiplatelet Therapy in ACS and Beyond	0741-0000-16-003-L01-P	5 (0.5)	Marco Island/www.u niversitylearni ng.com/8009 405860	Knowledge	0741 - University Learning Systems, Inc.
Shifting Paradigms in the Management of Heart Failure and Heart Failure in Special Populations, Special Considerations with Oral Anticoagulants, Antiplatelet Therapy in ACS and Beyond	0741-0000-16-003-L01-P	5 (0.5)	Marco Island/www.u niversitylearni ng.com/8009 405860	Knowledge	0741 - University Learning Systems, Inc.
Lipid Management in Cardiovascular Disease Risk Reduction: A Patient-Centered Review	0798-0000-15-143-L01-P	1 (0.1)	www.freeCE.c om	Knowledge	0798 - PharmCon, Inc.
Should we "RE-LY" on Dabigatran for the Prevention of Stroke in Patients with Nonvalvular Atrial Fibrillation?	0104-9999-13-028-L04-P	1 (0.1)	El Paso	Knowledge	0104 - New Mexico Pharmacists Association
Sleep Apnea	0845-0000-14-024-L04-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
Sleep Apnea	0845-0000-14-024-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Sodium Channels in the Heart: An Update	0256-0000-14-733-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Sodium Controversies in Heart Failure	0256-0000-15-799-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association

Specialty Pharmacy Today & Tomorrow: Traditional Specialty Management Tactics for Chronic Diseases May Not Produce Positive Clinical Outcomes in Rare Diseases	0171-9999-13-070-L01-P	1.5 (0.15)	Palm Desert	Knowledge	0171 - South Carolina Pharmacy Association
Spectrum of Acute Heart Care: From ED to Rehab	0256-0000-15-811-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Spotlight Series: Reducing Readmission after Heart Failure - An Evidence Based Approach	0256-0000-15-745-L01-P	1 (0.1)	Lakehurst	Knowledge	0256 - American Heart Association
Spotlight Series: Stroke Prevention in Atrial Fibrillation: New Concepts, Treatments, and Challenges	0256-0000-14-705-L01-P	1 (0.1)	Chicago	Knowledge	0256 - American Heart Association
Spotlight Series: Stroke Prevention in Atrial Fibrillation: New Concepts, Treatments, and Challenges	0256-0000-14-705-L01-P	1 (0.1)	Greensboro	Knowledge	0256 - American Heart Association
Spotlight Series: The Management of Heart Failure - A Practical but Guideline Directed Approach	0256-0000-15-817-L01-P	1 (0.1)	Orlando	Knowledge	0256 - American Heart Association
Standard and Novel Therapies for Heart Failure	0256-0000-15-816-L01-P	1 (0.1)	Orlando	Knowledge	0256 - American Heart Association
Standards of Cardiovascular Care in Diabetes- 2015	0834-0000-15-032-L01-P	1.25 (0.125)	Corpus Christi	Knowledge	0834 - Texas A&M Health Science Center Coastal Bend Health Education Center
State-of-the-Art Clinical Applications of Cardiovascular Pharmacogenomics	0256-0000-14-741-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Statin Therapy: Managing the Benefit with the Risk and Alternative Therapies	0096-0000-13-025-L01-P	1 (0.1)	TTUHSC SOP - Abilene Campus	Knowledge	0096 - Texas Tech University Health Sciences Center School of Pharmacy
Statins: More than just lipid lowering?	0217-9999-14-160-L01-P	1 (0.1)	Chapel Hill	Knowledge	0217 - American College of Clinical Pharmacy
Statins: More than just lipid lowering?	0217-9999-14-160-L01-P	1 (0.1)	http://trianglepharmacist.org	Knowledge	0217 - American College of Clinical Pharmacy
STEMI Care in 2015	0256-0000-15-779-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Strategies for Pharmacologic Reversal of Novel Oral Anticoagulants	0032-9999-13-049-L01-P	1 (0.1)	Jackson	Knowledge	0032 - University of Mississippi School of Pharmacy

Strategies to Reduce Heart Failure Readmissions	0043-0000-15-047-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Stroke Care Plan from ED to ICU to Home - Where is your Pharmacist?	0204-0000-14-213-L04-P	1 (0.1)	Anaheim	Knowledge	0204 - American Society of Health-System Pharmacists
Stroke I: Acute Ischemia and Thrombolysis	0193-0000-14-014-L01-P	1 (0.1)	Center for Health Education Research, Morehead, KY	Knowledge	0193 - Northeast Kentucky Area Health Education Center
Stroke Prophylaxis in Atrial Fibrillation: Which oral anticoagulant should my patient use?	0845-0000-15-001-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Stroke Prophylaxis in Atrial Fibrillation: Which oral anticoagulant should my patient use?	0845-0000-15-001-L04-P	1 (0.1)	http://ce.unthsc.edu/	Knowledge	0845 - University of North Texas Health Science Center
Structural Cardiac Interventions: State-of-the-Art	0453-9999-15-146-L04-P	0.5 (0.05)	Lombard	Knowledge	0453 - Amedco, LLC
Student Pharmacist Self Care Championship	0136-0000-14-040-L04-P	1.5 (0.15)	Asbury Park	Knowledge	0136 - New Jersey Pharmacists Association
Success from Failure: 2013 Heart Failure Guidelines from the American Heart Association	0798-0000-14-069-L01-P	1 (0.1)	www.freeCE.com	Knowledge	0798 - PharmCon, Inc.
Target Specific Oral Anticoagulants: Two Steps Forward or One Step Back?	0837-9999-13-059-L01-P	1 (0.1)	Manchester	Knowledge	0837 - University of New England College of Pharmacy
Target-Specific Oral Anticoagulants and Bleeding--What is the risk and How do we Manage it?	0837-9999-15-081-L01-P	1 (0.1)	Bedford	Knowledge	0837 - University of New England College of Pharmacy
The 18th Annual Infectious Diseases & Critical Care Symposium: Session I	0510-0000-14-001-L01-P	3 (0.3)	Dearborn	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
The 2013 Lipid Guidelines: What's New, What's Old, and What is all the Talk About?!	0159-0000-14-030-L04-P	1 (0.1)	Webinar	Knowledge	0159 - Pennsylvania Pharmacists Association
The 2015 NPA Continuing Education Symposium	0230-9999-15-006-L04-P	7.5 (0.75)	Tampa	Knowledge	0230 - USF Health
The 2015 NPA Continuing Education Symposium	0230-9999-15-007-L04-P	7.5 (0.75)	Tampa	Knowledge	0230 - USF Health
The ABC's of Heart Failure and a Little on D as Well: A Focus on Current and Future Management	0104-9999-14-074-L04-P	1 (0.1)	El Paso	Knowledge	0104 - New Mexico Pharmacists Association

The Alzheimer's Theory of Heart Failure	0256-0000-14-730-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
The Approach to Reversing Anticoagulation in Intracerebral Hemorrhages	0618-0000-13-034-L01-P	0.5 (0.05)	West Palm Beach, FL	Knowledge	0618 - Palm Beach Atlantic University
The Beat Goes On: Management of Post-operative Complications in Patients with Congenital Heart Abnormalities	0294-9999-15-142-L04-P	1 (0.1)	Charlottesville	Knowledge	0294 - VCU School of Pharmacy, Office of Continuing Education
The Beat Goes On: Pharmacotherapy for Commonly Encountered Arrhythmias	0741-0000-13-016-L01-P	5 (0.5)	Las Vegas/www.universitylearning.com/800-940-5860	Knowledge	0741 - University Learning Systems, Inc.
The Beat Goes On: Pharmacotherapy for Commonly Encountered Arrhythmias	0741-0000-13-016-L01-P	5 (0.5)	Las Vegas/www.universitylearning.com/800-940-5860	Knowledge	0741 - University Learning Systems, Inc.
The Best of Cardiometabolic Health Congress: 2015 Regional Conference Series	0816-9999-15-042-L01-P	6.5 (0.65)	Atlanta	Knowledge	0816 - Medical Education Resources, Inc.
The Best of Cardiometabolic Health Congress: 2015 Regional Conference Series	0816-9999-15-042-L01-P	6.5 (0.65)	Dallas	Knowledge	0816 - Medical Education Resources, Inc.
The Best of Cardiometabolic Health Congress: 2015 Regional Conference Series	0816-9999-15-042-L01-P	6.5 (0.65)	Las Vegas	Knowledge	0816 - Medical Education Resources, Inc.
The Changing Landscape of Anticoagulation	0455-9999-13-007-L01-P	1.5 (0.15)	NVSHS annual Reno, Nevada	Knowledge	0455 - Roseman University of Health Sciences
The Clot Thickens: Current Reversal Strategies for Oral Anticoagulants and a Look at New Reversal Agents in Development	0163-9999-15-235-L01-P	1 (0.1)	Jacksonville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
The Continuum of Care for Myocardial Infarction	0062-9999-14-119-L01-P	3 (0.3)	Greenville (Greenville Memorial Hosp Medical Staff	Knowledge	0062 - South Carolina College of Pharmacy
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Anaheim	Knowledge	0289 - PESI, Inc.

The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Bloomington	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Columbia	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Denver	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Honolulu	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	King of Prussia	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Las Vegas	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Manhattan	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Monroeville	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Plainview	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Portland	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	San Diego	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	San Francisco	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	Seattle	Knowledge	0289 - PESI, Inc.
The Core Competencies of Atrial Fibrillation, Heart Failure and Monitoring	0289-0000-14-030-L01-P	6.7 (0.67)	St. Louis	Knowledge	0289 - PESI, Inc.
The Evolving Role of Biomarkers in Heart Failure	0256-0000-14-740-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association

The GOLD Standard - Understanding and Treating COPD	0798-0000-15-017-L01-P	1 (0.1)	www.freeCE.com	Knowledge	0798 - PharmCon, Inc.
The Good, Bad, and Ugly: Clinical Controversies and Cases in Arrhythmia Management	0510-0000-14-032-L01-P	1 (0.1)	Detroit	Knowledge	0510 - Detroit Medical Center Department of Pharmacy Services, The
The Gut Microbiome	0826-9999-16-004-L01-P	2 (0.2)	ceinternational.com/microbiota.aspx	Knowledge	0826 - MED2000, Inc.
The Heart of the Matter: Achieving Optimal Outcomes in Patients with Cardiovascular Conditions	0006-0000-14-006-L04-P	2 (0.2)	Hotel Kabuki, San Francisco	Knowledge	0006 - University of the Pacific, Thomas J. Long School of Pharmacy and Health Sciences
The Long & Winding Road: Drug-Induced QT-Interval Prolongation	0064-0000-15-056-L01-P	1 (0.1)	Nashville	Knowledge	0064 - University of Tennessee College of Pharmacy
The Management of Arrhythmias	0377-0000-14-003-L01-P	1 (0.1)	Columbia University Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
The Management of Arrhythmias	0377-0000-14-003-L01-P	1 (0.1)	Weill Cornell Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
The Management of Arrhythmias	0377-0000-14-004-L01-P	1 (0.1)	Columbia University Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
The Management of Arrhythmias	0377-0000-14-004-L01-P	1 (0.1)	Weill Cornell Medical Center, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
The Medical Management of Chronic Heart Failure	0043-0000-15-044-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
The Neurohormonal Paradigm: Are We There Yet?	0217-9999-15-182-L01-P	0.75 (0.075)	Philadelphia	Knowledge	0217 - American College of Clinical Pharmacy
The New Guidelines – Hypertension and Cholesterol	0013-0000-14-002-L01-P	1.75 (0.175)	Atlanta	Knowledge	0013 - Mercer University College of Pharmacy
The New Kids on the Block for Heart Failure: How Do They Fit In?	0256-0000-15-785-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
The Pharmacist's Role in Improving Cardiovascular Health	0106-9999-13-052-L01-P	2 (0.2)	Norwood, MA	Knowledge	0106 - Connecticut Pharmacists Association
The Pharmacist's Role in Improving Cardiovascular Health	0106-9999-13-052-L01-P	2 (0.2)	Southington, CT	Knowledge	0106 - Connecticut Pharmacists Association
The Pharmacist's Role in the New Landscape of Pharmacologic Anticoagulation	0043-0000-13-037-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
The place of PCSK9 inhibitors in treatment of hyperlipidemia	0172-0000-15-017-L01-P	1 (0.1)	Mobile	Knowledge	0172 - Alabama Society of Health-System Pharmacists

The Prevention of Heart Failure: Targets and Strategies	0008-9999-15-085-L01-P	2 (0.2)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
The Role of Antithrombin III in the Pediatric Intensive Care Unit	0180-0000-13-225-L01-P	0.25 (0.025)	Indianapolis	Knowledge	0180 - Pediatric Pharmacy Advocacy Group
The Role of Biomarkers in Heart Failure	0256-0000-15-790-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
The Role of Inhaled Antibiotics in VAP	0526-0000-15-001-L01-P	1 (0.1)	Baltimore	Knowledge	0526 - The Education Unit at ICON
The Role of Novel Oral Anticoagulants in the Management of Cancer-Associated Venous Thromboembolism	0172-9999-14-002-L01-P	1 (0.1)	Tuscaloosa	Knowledge	0172 - Alabama Society of Health-System Pharmacists
The Role of Pharmacogenomics in Cardiovascular Disease: How Will Your Patients Respond?	0159-0000-14-056-L01-P	2 (0.2)	Mars	Knowledge	0159 - Pennsylvania Pharmacists Association
The Role of the Cardiovascular Team Member in a structural Heart Disease Clinic	0453-9999-15-147-L04-P	0.25 (0.025)	Lombard	Knowledge	0453 - Amedco, LLC
The Role of the New Oral Anticoagulants in Clinical Therapy	0010-0000-14-015-L01-P	1 (0.1)	Washington	Knowledge	0010 - Howard University College of Pharmacy
The Safety of bHRT in Women - CV and Cancer Risks associated with bHRT	0201-9999-15-122-L01-P	1 (0.1)	San Diego	Knowledge	0201 - American College of Apothecaries, Inc.
The Skinny on Lipid Lowering Treatment	0165-0000-14-074-L01-P	1.5 (0.15)	Destin	Knowledge	0165 - Florida Pharmacy Association
The Treatment of Venous Thromboembolism (VTE): Has Warfarin Met Its Match?	0134-9999-14-029-L01-P	1 (0.1)	St Paul	Knowledge	0134 - New York State Council of Health-System Pharmacists
The Trials and Tribulations of Lipid Management in 2013	0167-0000-13-032-L01-P	1 (0.1)	Salt Lake City	Knowledge	0167 - Utah Society of Health-System Pharmacists
The Ultimate One-Day Course on Cardiac Medications	0289-0000-14-034-L01-P	6.3 (0.63)	Burlington	Knowledge	0289 - PESI, Inc.
The Ultimate One-Day Course on Cardiac Medications	0289-0000-14-034-L01-P	6.3 (0.63)	Lynnwood	Knowledge	0289 - PESI, Inc.
The Ultimate One-Day Course on Cardiac Medications	0289-0000-14-034-L01-P	6.3 (0.63)	Manchester	Knowledge	0289 - PESI, Inc.
The Ultimate One-Day Course on Cardiac Medications	0289-0000-14-034-L01-P	6.3 (0.63)	Portland	Knowledge	0289 - PESI, Inc.
The Ultimate One-Day Course on Cardiac Medications	0289-0000-14-034-L01-P	6.3 (0.63)	Seattle	Knowledge	0289 - PESI, Inc.

The Ultimate One-Day Course on Cardiac Medications	0289-0000-14-034-L01-P	6.3 (0.63)	Spokane	Knowledge	0289 - PESI, Inc.
The Ultimate Weight Loss & Weight Management Bootcamp	0826-9999-13-032-L01-P	6 (0.6)	Ann Arbor, MI	Knowledge	0826 - MED2000, Inc.
The Ultimate Weight Loss & Weight Management Bootcamp	0826-9999-13-032-L01-P	6 (0.6)	http://ceinternational.com/weightlossbootcamp.aspx	Knowledge	0826 - MED2000, Inc.
The Ultimate Weight Loss & Weight Management Bootcamp	0826-9999-13-032-L01-P	6 (0.6)	Troy, MI	Knowledge	0826 - MED2000, Inc.
The Wait is Over: New Recommendations for Hypertension and Dyslipidemia and Implications for Patient Care	0741-0000-14-004-L01-P	5 (0.5)	Las Vegas/www.universitylearning.com/800-940-5860	Knowledge	0741 - University Learning Systems, Inc.
The Wait is Over: New Recommendations for Hypertension and Dyslipidemia and Implications for Patient Care	0741-0000-14-004-L01-P	5 (0.5)	Las Vegas/www.universitylearning.com/800-940-5860	Knowledge	0741 - University Learning Systems, Inc.
Therapeutic Considerations in the Advanced Heart Failure Patient	0163-9999-13-223-L01-P	1 (0.1)	Jacksonville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Therapeutic Frontiers Award Lecture -- Barry Massie M.D.: A Career at the Frontier of Heart Failure Research	0217-0000-14-099-L01-P	0.75 (0.075)	Austin, www.accp.com/am	Knowledge	0217 - American College of Clinical Pharmacy
Therapeutic Frontiers Award Lecture -- Barry Massie M.D.: A Career at the Frontier of Heart Failure Research	0217-0000-14-099-L01-P	0.75 (0.075)	Austin, www.accp.com/am	Knowledge	0217 - American College of Clinical Pharmacy
Therapeutic hypothermia post cardiac arrest	0857-9999-14-034-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Therapeutic Management of Primary Pulmonary Hypertension	0280-0000-14-098-L01-P	1 (0.1)	Randolph	Knowledge	0280 - American Health Resources
Therapeutic Updates	0215-0000-15-908-L01-P	2.5 (0.25)	Detroit	Knowledge	0215 - National Pharmaceutical Association, Inc.
Therapies and Targets for Cardiac Hypertrophy	0256-0000-15-795-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Thin is the New In: A Review of the Novel Anticoagulants	0011-0000-15-031-L04-P	1.5 (0.15)	Jacksonville/850.599.3240	Knowledge	0011 - Florida A&M University College of Pharmacy and Pharmaceutical Sciences

Thinning out the Data: Anticoagulation in ECMO	0857-9999-15-055-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Thrombolytics in Cardiac Arrest: PE... or not PE? That is the question	0837-9999-16-021-L01-P	1 (0.1)	Portland	Knowledge	0837 - University of New England College of Pharmacy
Thrombolytics in Submassive Pulmonary Embolism – to bust or not to bust?	0857-9999-14-025-L04-P	1 (0.1)	Chicago	Knowledge	0857 - Chicago State University College of Pharmacy
Thrombosis & Hemostasis Summit 2014 of North America, Basic Science: New Concepts in Mechanisms of Thrombosis	0060-9999-14-008-L01-P	2 (0.2)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis & Hemostasis Summit 2014 of North America: Antithrombotic Therapy for Atrial Fibrillation	0060-9999-14-009-L01-P	1.5 (0.15)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis & Hemostasis Summit 2014 of North America: Coagulopathy of Trauma	0060-9999-14-005-L01-P	2 (0.2)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis & Hemostasis Summit 2014 of North America: New Oral Anticoagulants In Everyday Practice	0060-9999-14-006-L01-P	2 (0.2)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis & Hemostasis Summit of North America: Regulation of Coagulation	0060-9999-14-011-L01-P	1.5 (0.15)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis and Hemostasis Summit of North America 2014: Challenges in VTE Management	0060-9999-14-012-L01-P	1.5 (0.15)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis and Hemostasis Summit of North America 2014: Controversies in Thrombosis, Hemostasis, and in the Laboratory	0060-9999-14-022-L01-P	2 (0.2)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis and Hemostasis Summit of North America 2014: Current Coagulation Topics	0060-9999-14-020-L01-P	2 (0.2)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis and Hemostasis Summit of North America 2014: Global Assays	0060-9999-14-013-L01-P	1.5 (0.15)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy

Thrombosis and Hemostasis Summit of North America 2014: Public Health Matters - Policy/Advocacy	0060-9999-14-015-L01-P	1.5 (0.15)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis and Hemostasis Summit of North America 2014: Thrombophilia and Quality Assurance	0060-9999-14-014-L01-P	1.5 (0.15)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Thrombosis and Hemostasis Summit of North America 2014: Thrombosis and Anticoagulant Management in Children and Adolescents	0060-9999-14-019-L01-P	2 (0.2)	Chicago	Knowledge	0060 - University of Rhode Island College of Pharmacy
Tightening the Belt on Cholesterol: A Review of the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults	0104-9999-14-069-L01-P	1 (0.1)	El Paso	Knowledge	0104 - New Mexico Pharmacists Association
Time is Tissue: A Guide to Recognition, Diagnosis and Treatment of NSTEMI/STEMI	0163-9999-14-162-L01-P	1 (0.1)	Tampa	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
To Test or Not to Test ♦ A Journal Club Discussion on the COAG Trial Polymyxin B: Are dosage adjustments necessary?	0134-0000-14-072-L01-P	1 (0.1)	Saratoga Springs	Knowledge	0134 - New York State Council of Health-System Pharmacists
Tobacco and Vascular Disease	0004-9999-14-155-L01-P	0.5 (0.05)	Little Rock	Knowledge	0004 - University of Arkansas for Medical Sciences College of Pharmacy
Too many questions, too few answers: the reality of 4-factor prothrombin Complex Concentrate Administration	0837-9999-15-061-L01-P	1 (0.1)	Portland	Knowledge	0837 - University of New England College of Pharmacy
Top 10 Hot Topics in Cardiology in 2012	0043-0000-13-042-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Top Papers Cardiac/Vascular	0163-0000-15-164-L01-P	1 (0.1)	Orlando	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Transitioning from Hospital to Home after an Acute Coronary Event	0053-0000-15-073-L01-P	1 (0.1)	Oklahoma City	Knowledge	0053 - University of Oklahoma College of Pharmacy
Transitions in Heart Failure Care: It's Not Just About Hospital to Home	0008-9999-15-084-L01-P	2 (0.2)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences

Transitions of Care for COPD Patients	0845-0000-16-003-L05-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
Transitions of Care for COPD Patients	0845-0000-16-003-L05-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Treating Hypertension	0062-0000-14-018-L01-P	1 (0.1)	Columbia	Knowledge	0062 - South Carolina College of Pharmacy
Treatment of Arrhythmias: Pharmacological---Novel Anticoagulants	0256-0000-14-725-L01-P	1.25 (0.125)	Chicago	Knowledge	0256 - American Heart Association
Treatment of Heart failure in Special Populations: Same or Different?	0256-0000-15-789-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Treatment of Obstructive Pulmonary Disease	0059-9999-15-033-L01-P	0.75 (0.075)	Hyatt Regency LA 909-706-3826	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Treatment of Obstructive Pulmonary Disease	0059-9999-15-044-L01-P	0.75 (0.075)	Hyatt Regency LA 909-706-3826	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Treatment of pulmonary arterial hypertension	0163-9999-14-034-L01-P	1 (0.1)	Weston	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Treatment of Structural Heart Disease	0256-0000-14-724-L01-P	1.5 (0.15)	Chicago	Knowledge	0256 - American Heart Association
Type 2 Diabetes: Individualized Patient Care to Improve Outcomes	0280-0000-13-088-L01-P	2 (0.2)	Westborough	Knowledge	0280 - American Health Resources
UK HealthCare's Comprehensive Stroke Program: Improving the Quality of Care in Kentucky and Beyond	0022-0000-14-083-L01-P	1 (0.1)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy
Unbreak My Heart: HFrEF and HFpEF	0136-0000-14-030-L01-P	1.5 (0.15)	New Brunswick	Knowledge	0136 - New Jersey Pharmacists Association
Unbreak My Heart: HFrEF and HFpEF	0136-0000-14-030-L01-P	1.5 (0.15)	Voorhees	Knowledge	0136 - New Jersey Pharmacists Association
Understanding the Changing Horizon on Pharmacological Management for Atrial Fibrillation	0106-9999-13-024-L01-P	1 (0.1)	Mashantucket	Knowledge	0106 - Connecticut Pharmacists Association
Update 2014: Heart Failure or Heart Success	0837-9999-14-093-L01-P	1 (0.1)	Manchester	Knowledge	0837 - University of New England College of Pharmacy
Update in Anticoagulation -- Focus on DOACs & Reversal Agents	0008-0000-16-001-L05-P	1 (0.1)	Aurora	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Update in Heart Failure Pharmacotherapy	0499-9999-16-005-L01-P	2 (0.2)	Florence	Knowledge	0499 - Southeastern Continuing Medical Education Consultants, LLC

Update on Anticoagulant and Antiplatelet Therapy: New Considerations for the Pharmacist	0280-0000-15-030-L01-P	1.5 (0.15)	Woburn	Knowledge	0280 - American Health Resources
Update on Anticoagulation	0136-0000-13-016-L04-P	2 (0.2)	Flemington	Knowledge	0136 - New Jersey Pharmacists Association
Update on Anticoagulation Management for VTE	0106-9999-13-020-L01-P	1 (0.1)	Mashantucket	Knowledge	0106 - Connecticut Pharmacists Association
Update on Cardiovascular Agents and their Uses	0179-9999-13-016-L01-P	1 (0.1)	Monroe, LA	Knowledge	0179 - Louisiana Society of Health-System Pharmacists
Update on Cardiovascular Agents and their Uses	0179-9999-13-016-L01-P	1 (0.1)	ULM College of Pharmacy, Monroe	Knowledge	0179 - Louisiana Society of Health-System Pharmacists
Update on Cardiovascular Guidelines: Hypertension and Hyperlipidemia	0217-9999-14-092-L01-P	1 (0.1)	Philadelphia	Knowledge	0217 - American College of Clinical Pharmacy
Update on STATIN Medications	0053-0000-13-075-L01-P	1 (0.1)	Oklahoma City	Knowledge	0053 - University of Oklahoma College of Pharmacy
Update on STATIN Medications	0053-0000-13-075-L01-P	1 (0.1)	Tulsa	Knowledge	0053 - University of Oklahoma College of Pharmacy
Update on the Guidelines for the Treatment of Blood Cholesterol in Adult Patients	0043-0000-14-033-L01-P	1 (0.1)	Jamaica	Knowledge	0043 - St. John's University College of Pharmacy and Health Sciences
Update on the Treatment of Chronic Obstructive Pulmonary Disease (COPD)	0008-0000-16-002-L01-P	1 (0.1)	Aurora	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Update on treatment of acute coronary syndromes	0163-9999-15-023-L01-P	1 (0.1)	Weston	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Updates from the 2014 AHA/ACC NSTEMI-ACS Guidelines	0256-0000-15-772-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Updates in Acute Coronary Syndrome Guidelines and Practice	0032-9999-13-057-L01-P	1 (0.1)	Jackson	Knowledge	0032 - University of Mississippi School of Pharmacy
Updates in Anticoagulation Management	0088-9999-14-031-L01-P	1.25 (0.125)	Buies Creek	Knowledge	0088 - Campbell University College of Pharmacy and Health Sciences
Updates in Anticoagulation Reversal and New agents	0173-0000-15-009-L04-P	1 (0.1)	Boise www.ishp.shu tlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Updates in Anticoagulation Reversal and New agents	0173-0000-15-009-L04-P	1 (0.1)	Boise www.ishp.shu tlepod.org	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Updates in Arrhythmias: Focus on Anticoagulation Management	0163-9999-13-196-L01-P	1 (0.1)	Tampa	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.

Updates in Cardiology	0163-9999-15-007-L01-P	1 (0.1)	Jacksonville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Updates in Cardiology and Critical Care	0163-9999-14-002-L01-P	1 (0.1)	Jacksonville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Updates in Contemporary Pharmacy Practice- Internal Medicine Part I	0163-9999-13-081-L01-P	1 (0.1)	Gainesville	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Updates in Management of Pulmonary Hypertension (PH) and Practical Insights for Inpatient Pharmacists	0064-9999-15-103-L01-P	1 (0.1)	Memphis	Knowledge	0064 - University of Tennessee College of Pharmacy
Updating an old standard: Why we should consider an alternative to the aPTT for monitoring unfractionated heparin	0389-0000-14-005-L01-P	0.5 (0.05)	Waltham	Knowledge	0389 - Lahey Hospital & Medical Center
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Burlington	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Dedham	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Framingham	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Manchester	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Manhattan	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Martinsburg	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Plainview	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Portland	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	White Plains	Knowledge	0289 - PESI, Inc.
Urgencies vs. Emergencies in the Geriatric Patient	0289-0000-14-010-L01-P	6.3 (0.63)	Woburn	Knowledge	0289 - PESI, Inc.
Use of Left Atrial Appendage Closure in Patients for Whom Anticoagulation Therapy is Contraindicated	0022-0000-14-079-L01-P	0.5 (0.05)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy

Use of New Oral Anticoagulants in Venous Thromboembolism: Are VKAs MIA?	0377-0000-13-004-L01-P	1 (0.1)	New York, NY	Knowledge	0377 - New York Presbyterian Hospital Department of Pharmacy
Use of Sildenafil in Pulmonary Hypertension Secondary to BPD	0180-0000-13-201-L01-P	1 (0.1)	Indianapolis	Knowledge	0180 - Pediatric Pharmacy Advocacy Group
Use of Thrombolytics in Venous Thromboembolism (VTE)	0051-9999-14-001-L01-P	1 (0.1)	Toledo	Knowledge	0051 - University of Toledo College of Pharmacy
Utilizing Guidelines to Manage COPD	0280-0000-13-115-L01-P	2 (0.2)	Rochester	Knowledge	0280 - American Health Resources
Value of a Comprehensive Stroke Center	0022-0000-14-082-L01-P	0.5 (0.05)	Lexington	Knowledge	0022 - University of Kentucky College of Pharmacy
Vegetarian Nutrition	0826-9999-14-026-L01-P	1 (0.1)	http://ceinternational.com/vegdiets.aspx	Knowledge	0826 - MED2000, Inc.
Ventricular Assist Devices: Real World Situations	0256-0000-15-775-L01-P	1.25 (0.125)	Orlando	Knowledge	0256 - American Heart Association
Vitamin D: Vitamin or Hormone?	0826-9999-15-022-L01-P	2 (0.2)	www.ceinternational.com/vitd.aspx	Knowledge	0826 - MED2000, Inc.
Vorapaxar - Part of Your World	0064-0000-15-075-L01-P	1 (0.1)	Memphis	Knowledge	0064 - University of Tennessee College of Pharmacy
Vorapaxar, a novel antiplatelet agent	0414-0000-15-004-L01-P	0.75 (0.075)	Wingate	Knowledge	0414 - Wingate University School of Pharmacy
Vorapaxar, the first PAR-1 antagonist approved by the FDA for use with aspirin and/or clopidogrel to reduce the risk of thrombotic cardiovascular events in patients with PAD or MI	0217-9999-15-152-L01-P	1 (0.1)	Memphis	Knowledge	0217 - American College of Clinical Pharmacy
Waiting to Inhale: An Update of COPD	0837-9999-15-091-L01-P	1 (0.1)	Manchester	Knowledge	0837 - University of New England College of Pharmacy
Weight Loss/Weight Management Bootcamp	0826-9999-16-002-L01-P	6 (0.6)	http://ceinternational.com/weightlossweightmanagement	Knowledge	0826 - MED2000, Inc
What is the Role for Steroids in Newborns with Cardiovascular Insufficiency?	0263-0000-15-539-L01-P	0.75 (0.075)	http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
What is the Role for Steroids in Newborns with Cardiovascular Insufficiency?	0263-0000-15-539-L01-P	0.75 (0.075)	Scottsdale/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums
What is the Role for Steroids in Newborns with Cardiovascular Insufficiency?	0263-0000-15-539-L01-P	0.75 (0.075)	Scottsdale/ http://www.contemporaryforums.com	Knowledge	0263 - Contemporary Forums

What You Need to Know to Manage a Patient with Left Ventricular Assist Device	0453-9999-15-144-L04-P	0.5 (0.05)	Lombard	Knowledge	0453 - Amedco, LLC
What's New and Emerging in Heart Failure Pharmacology	0008-9999-15-096-L01-P	1.5 (0.15)	Washington	Knowledge	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
What's New in COPD	0002-0000-14-009-L01-P	1 (0.1)	https://student.gototrainin.com/r/345575763407626	Knowledge	0002 - Samford University McWhorter School of Pharmacy
What's New in Heart Failure	0032-9999-15-039-L01-P	1 (0.1)	Jackson	Knowledge	0032 - University of Mississippi School of Pharmacy
What's New in Medicine 2014 - Day 2	0347-9999-14-014-L01-P	9 (0.9)	Kennewick, Three Rivers Convention Center, 7:30am	Knowledge	0347 - Foundation for Care Management
What's New in Medicine Internal Medicine Infectious Diseases 2015 Day 2	0347-9999-15-010-L01-P	9 (0.9)	Kennewick, Three Rivers Conv Ctr 509-737-3700	Knowledge	0347 - Foundation for Care Management
What's New with Acute Coronary Syndrome?	0163-9999-15-051-L01-P	1 (0.1)	Tampa	Knowledge	0163 - Florida Society of Health-System Pharmacists, Inc.
Why the Long Face? A Review of Drug-Induced QTc Prolongation	0837-9999-14-096-L01-P	1 (0.1)	Manchester	Knowledge	0837 - University of New England College of Pharmacy
Women & Heart Disease	0171-0000-14-109-L01-P	2 (0.2)	Asheville	Knowledge	0171 - South Carolina Pharmacy Association
Women and Heart Disease: Paradigms for Prevention	0845-0000-15-002-L04-P	1 (0.1)	ce.unthsc.edu	Knowledge	0845 - University of North Texas Health Science Center
Women and Heart Disease: Paradigms for Prevention	0845-0000-15-002-L04-P	1 (0.1)	Fort Worth	Knowledge	0845 - University of North Texas Health Science Center
Womens Health Conference	0277-0000-13-202-L01-P	5.25 (0.525)	http://cme.ucdavis.edu	Knowledge	0277 - University of California Davis Health System Department of Pharmacy
Women's Health Conference	0277-0000-13-203-L01-P	5 (0.5)	http://cme.ucdavis.edu	Knowledge	0277 - University of California Davis Health System Department of Pharmacy
Women's Health for Primary Care - 3 Day	0816-0000-16-013-L01-P	11 (1.1)	Las Vegas	Knowledge	0816 - Medical Education Resources, Inc.
Working Together to Improve Heart Failure Outcomes	0175-0000-15-805-L01-P	1 (0.1)	Madison	Knowledge	0175 - Pharmacy Society of Wisconsin

Total Hours: 4077.81

Appendix G-4

ACPE PLAN Programming Live Forum Application Activity

Title	UAN	Hrs (CEUs)	City	Activity Type	Provider Description
10 Years of Waiting: Find Out About the Latest Updates in Hypertension and Lipid Guidelines	0204-0000-13-307-L01-P	2 (0.2)	Orlando	Application	0204 - American Society of Health-System Pharmacists
11th Annual Rocky Mountain Hospital Medicine Symposium	0230-9999-13-010-L01-P	7.5 (0.75)	Denver	Application	0230 - USF Health
2013 Central WI: An Update on Respiratory Diseases: Hands on Workshop	0073-0000-13-021-L01-P	3.5 (0.35)	Stevens Point	Application	0073 - Division of Pharmacy Professional Development University of Wisconsin-Madison
2013 From Theory to Practice: Clinical Reasoning Series in Ambulatory Care Pharmacy Evidence-Based Screening and Prevention Strategies	0217-0000-13-109-L01-P	6 (0.6)	Albuquerque, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
2015 Ambulatory Care Review/Recertification Course: Complex Case: Anticoagulation	0204-9999-15-931-L01-P	2 (0.2)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Ambulatory Care Review/Recertification Course: Complex Case: Anticoagulation	0204-9999-15-931-L01-P	2 (0.2)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Ambulatory Care Review/Recertification Course: Complex Case: Cardiovascular Disease 1	0204-9999-15-932-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Ambulatory Care Review/Recertification Course: Complex Case: Cardiovascular Disease 2	0204-9999-15-933-L01-P	2 (0.2)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Ambulatory Care Review/Recertification Course: Complex Case: Pulmonary	0204-9999-15-934-L01-P	1 (0.1)	Denver	Application	0204 - American Society of Health-System Pharmacists

2015 Critical Care Pharmacy Specialty Review Course: Complex Case: Warfarin-associated Intracranial Hemorrhage	0204-0000-15-955-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 From Theory to Bedside: Clinical Reasoning Series Heart Failure: Current and Emerging Management Strategies	0217-0000-15-111-L01-P	6 (0.6)	San Francisco www.accp.com/gc	Application	0217 - American College of Clinical Pharmacy
2015 Pediatric Pharmacy Specialty Review Course: Complex Case: Deep Vein Thrombosis and Metabolic Syndrome	0204-0000-15-963-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Pediatric Pharmacy Specialty Review Course: Complex Case: Status Epilepticus and Cardiopulmonary Resuscitation	0204-0000-15-962-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Pharmacotherapy Review and Recertification Course: Cardiovascular Disease: Secondary Prevention Case #1	0204-0000-15-944-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Pharmacotherapy Review and Recertification Course: Cardiovascular Disease: Secondary Prevention Case #2	0204-0000-15-945-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Pharmacotherapy Review and Recertification Course: Complex Nursing Home Case	0204-0000-15-943-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists

2015 Pharmacotherapy Specialty Examination Review Course: Complex Breast Cancer Case	0204-0000-15-949-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
2015 Pharmacotherapy Specialty Examination Review Course: Complex Pneumonia Case	0204-0000-15-950-L01-P	1.5 (0.15)	Denver	Application	0204 - American Society of Health-System Pharmacists
24th Annual Topics in the Tropics: A CME Conference for Primary Care Providers	0266-0000-15-022-L01-P	18 (1.8)	Punta Cana/www.geisinger.edu/570-271-6692	Application	0266 - Geisinger Health System
2nd Annual Time is Brain: Updates on Stroke Care	0266-0000-14-026-L05-P	5 (0.5)	Danville/www.geisinger.edu/570-271-6692	Application	0266 - Geisinger Health System
A Debate: How to Apply the CHADS2-VASc Score to the Patient with Atrial Fibrillation	0112-0000-16-115-L01-P	1.5 (0.15)	Detroit	Application	0112 - Michigan Pharmacists Association
A Pharmacist-Focused Update on JNC 8 Hypertension Guidelines: How Low Should You Go?	0027-9999-14-113-L01-P	1 (0.1)	Boston	Application	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
ACC/AHA Guideline on the Treatment of Blood Cholesterol: Update for Pharmacists	0280-0000-15-050-L01-P	2 (0.2)	Cromwell	Application	0280 - American Health Resources

ACLS: Getting to the Heart of the Matter	0217-9999-14-162-L01-P	1 (0.1)	Memphis	Application	0217 - American College of Clinical Pharmacy
Acute Coronary Syndrome: Unraveling the Complexities of Antiplatelet Management	0013-0000-13-001-L01-P	1.5 (0.15)	Atlanta	Application	0013 - Mercer University College of Pharmacy
Advances in Anticoagulation	0154-0000-15-042-L01-P	1.5 (0.15)	The Woodlands	Application	0154 - Texas Pharmacy Association
Advances in the Management of Dyslipidemia: Making Sense of Conflicting Treatment Recommendations	0202-0000-15-080-L01-P	2 (0.2)	San Diego	Application	0202 - American Pharmacists Association
Ambulatory Care Pharmacy Preparatory Review and Recertification Course—Cardiology I and Cardiology II	0217-0000-15-026-L01-P	3 (0.3)	Rosemont	Application	0217 - American College of Clinical Pharmacy
Ambulatory Care Pharmacy Preparatory Review and Recertification Course--Drug Information: Evidenced Based Medicine, Research, and HIPPA, Cardiology I, and Cardiology II	0217-0000-14-017-L01-P	3.5 (0.35)	Rosemont/www.accp.com/ut	Application	0217 - American College of Clinical Pharmacy
Ambulatory Care Pharmacy Preparatory Review and Recertification Course--Pulmonary Disorders and Smoking Cessation, Biostatistics: A Refresher, Study Designs: Fundamentals of Interpretation	0217-0000-14-016-L01-P	4 (0.4)	Rosemont/www.accp.com/ut	Application	0217 - American College of Clinical Pharmacy

<p>Ambulatory Care Pharmacy Preparatory Review and Recertification Course—Pulmonary Disorders, Gastrointestinal Disorders, and Obstetrics and Gynecology</p>	<p>0217-0000-15-025-L01-P</p>	<p>4 (0.4)</p>	<p>Rosemont</p>	<p>Application</p>	<p>0217 - American College of Clinical Pharmacy</p>
<p>An Investigative Report on New Hypertension and Dyslipidemia Guidelines: A Critical Evaluation</p>	<p>0204-0000-14-307-L01-P</p>	<p>2 (0.2)</p>	<p>Anaheim</p>	<p>Application</p>	<p>0204 - American Society of Health-System Pharmacists</p>
<p>An Overview in Cardiovascular Wellness and Prevention</p>	<p>0165-0000-13-076-L01-P</p>	<p>1.5 (0.15)</p>	<p>Destin</p>	<p>Application</p>	<p>0165 - Florida Pharmacy Association</p>
<p>An Update on the Management of Congestive Heart Failure</p>	<p>0165-0000-13-073-L01-P</p>	<p>1.5 (0.15)</p>	<p>Destin</p>	<p>Application</p>	<p>0165 - Florida Pharmacy Association</p>

An Update on the Treatment of COPD	0027-0000-13-081-L01-P	1.5 (0.15)	Boston	Application	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
An Update on the Treatment of COPD	0027-0000-13-074-L01-P	1.5 (0.15)	Mansfield	Application	Northeastern University Bouve College of Health Sciences School of
An Update on the Treatment of COPD	0027-0000-13-079-L01-P	1.5 (0.15)	Pittsfield	Application	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
Angina and Acute Myocardial Infarction ♦♦and I Thought It Was Just Gas♦	0165-0000-13-074-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association
Anticoagulant and Antiplatelet Agents in Special Patient Populations: Does One Size Fit All?	0204-0000-13-368-L01-P	2 (0.2)	Orlando	Application	0204 - American Society of Health-System Pharmacists
Anticoagulation LIVE Certificate Program	0100-0000-13-054-L01-P	8 (0.8)	Litchfield Park, AZ	Application	0100 - Arizona Pharmacy Association
Anticoagulation LIVE Certificate Program	0100-0000-13-054-L01-P	8 (0.8)	Phoenix	Application	0100 - Arizona Pharmacy Association
Anticoagulation LIVE Certificate Program	0100-0000-13-054-L01-P	8 (0.8)	Phoenix, AZ	Application	0100 - Arizona Pharmacy Association
Anticoagulation LIVE Certificate Program	0100-0000-13-054-L01-P	8 (0.8)	Tucson	Application	0100 - Arizona Pharmacy Association
Are You Ready for CMS Readmission Penalties for COPD?	0202-0000-15-022-L01-P	2 (0.2)	San Diego	Application	0202 - American Pharmacists Association
At Last...New 2013 ACC/AHA Guideline on Treatment of Cholesterol- What you need to know	0140-0000-14-123-L01-P	1 (0.1)	Eau Claire	Application	0140 - Marshfield Clinic Health Systems, Inc.

Best Practices for Obesity Management: Overview of Pharmacotherapy	0165-0000-13-072-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association
Beyond the Guidelines: Management of End-Stage Heart Failure	0163-9999-13-064-L01-P	1 (0.1)	St. Petersburg	Application	0163 - Florida Society of Health-System Pharmacists, Inc.
Bio-Identical Hormone Replacement Therapy - What's Most Effective?	0201-9999-14-014-L01-P	1 (0.1)	Fort Lauderdale	Application	0201 - American College of Apothecaries, Inc.
Building Capacity for the Pharmacists Role in Accountable Care Organizations: the Cardiovascular Physical Exam	0159-0000-13-045-L01-P	1.5 (0.15)	Gettysburg	Application	0159 - Pennsylvania Pharmacists Association
Cardiology Practice Based Program: Seminar	0134-0000-15-006-L01-P	12.5 (1.25)	Bolton Landing	Application	0134 - New York State Council of Health-System Pharmacists
Cardiology PRN Focus Session—Continuity of Cardiovascular Care: Considering Inpatient and Outpatient Perspectives for Heart Failure, Valve Disease, and Uncontrolled Cardiovascular Risk	0217-0000-14-121-L01-P	2 (0.2)	Austin, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Cardiology PRN Focus Session ♦ High-Risk Patients and High-Risk Medications: Role of the Cardiovascular Clinical Pharmacist	0217-0000-13-121-L01-P	2 (0.2)	Albuquerque, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Cardiology Workshop	0215-0000-14-001-L01-P	2 (0.2)	Arlington	Application	0215 - National Pharmaceutical Association, Inc.
Cardiorenal Syndrome	0163-9999-13-065-L01-P	1 (0.1)	Ft. Myers	Application	0163 - Florida Society of Health-System Pharmacists, Inc.
Cardiovascular Update	0215-0000-14-910-L01-P	3 (0.3)	Kissimmee	Application	0215 - National Pharmaceutical Association, Inc.
Caution Bridge Ahead: Perioperative Bridging with LMWH	0130-0000-15-111-L05-P	1.5 (0.15)	Suquamish	Application	0130 - Washington State Pharmacy Association
Challenging the Norm: Recent Papers Challenging BP Goals, Aspirin Therapy, and HCAP Treatment	0204-0000-14-320-L01-P	1.25 (0.125)	Anaheim	Application	0204 - American Society of Health-System Pharmacists
Cholesterol and Blood Pressure Guidelines: Were They Worth the Wait?	0027-9999-14-094-L01-P	1 (0.1)	Springfield	Application	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy

Chronic Obstructive Pulmonary Disease (COPD)	0140-0000-14-120-L01-P	1 (0.1)	Eau Claire	Application	0140 - Marshfield Clinic Health Systems, Inc.
Chronic Obstructive Pulmonary Disease: Current Clinical Approach	0053-9999-14-003-L01-P	1 (0.1)	Tulsa	Application	0053 - University of Oklahoma College of Pharmacy
Clinical Controversies in Ambulatory Care Practice: When Guidelines Conflict	0204-0000-15-125-L01-P	2 (0.2)	Denver	Application	0204 - American Society of Health-System Pharmacists
Clinical Forum on Anticoagulation	0175-0000-14-056-L01-P	2.75 (0.275)	Wisconsin Dells	Application	0175 - Pharmacy Society of Wisconsin
Clinical Forum: Cardiology in Acute Care	0175-0000-13-049-L01-P	2.75 (0.275)	Green Bay	Application	0175 - Pharmacy Society of Wisconsin
Clinical Updates: Major Bleeding with Oral Anticoagulant Therapy	0204-0000-13-341-L01-P	2 (0.2)	Orlando	Application	0204 - American Society of Health-System Pharmacists
COBTH-Outpatient Updates: Diabetes Mellitus (DM), Hypertension (HTN), Hyperlipidemia (HL)	0027-0000-14-082-L01-P	1 (0.1)	Boston	Application	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
Complications of Continuous-Flow Left Ventricular Assist Devices	0453-9999-15-137-L01-P	1 (0.1)	Lancaster	Application	0453 - Amedco, LLC
Comprehensive Medical Update & Osteopathic Primary Care Review: Day 2	0159-9999-14-062-L04-P	10 (1)	Champion	Application	0159 - Pennsylvania Pharmacists Association
Comprehensive Medical Update & Osteopathic Primary Care Review: Day 3	0159-9999-14-063-L04-P	9 (0.9)	Champion	Application	0159 - Pennsylvania Pharmacists Association
Contemporary Considerations in Anticoagulant Management	0280-0000-13-092-L01-P	1.5 (0.15)	Trumbull	Application	0280 - American Health Resources
Controlling the 'Silent Killer'-Management of Resistant Hypertension	0618-0000-15-007-L01-P	1 (0.1)	West Palm Beach	Application	0618 - Palm Beach Atlantic University
COPD: Enhancing Primary and Transitional Care Measures	0165-0000-14-116-L01-P	1.5 (0.15)	Orlando	Application	0165 - Florida Pharmacy Association
COPD: Enhancing Primary and Transitional Care Measures	0165-0000-15-040-L01-P	1 (0.1)	St. Augustine	Application	0165 - Florida Pharmacy Association
Preparatory Review Course—Pain, Agitation, Delirium, and Neuromuscular Blockade in the Intensive Care Unit, Neurocritical Care, and Pulmonary Disorders	0217-0000-15-033-L01-P	4.5 (0.45)	Rosemont	Application	0217 - American College of Clinical Pharmacy

Critical Care Pharmacy Preparatory Review Course—Supportive and Preventive Medicine, Shock Syndromes, Cardiovascular Critical Care, and Acute Cardiac Care	0217-0000-15-031-L01-P	4.5 (0.45)	Rosemont	Application	0217 - American College of Clinical Pharmacy
Curricular Track I: Challenges in Drug Dosing for Complicated Patient Populations ♦ Anticoagulants in Special Populations	0217-0000-13-114-L01-P	1.5 (0.15)	Albuquerque, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Curricular Track III: Clinical Controversies—Conundrums in Published Clinical Guidelines	0217-0000-14-117-L01-P	1.5 (0.15)	Austin, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Demystifying Acute Management of Atrial Fibrillation	0204-0000-14-268-L01-P	1.5 (0.15)	Anaheim	Application	0204 - American Society of Health-System Pharmacists
Diet and Exercise for Cardiovascular Patients – What Does That Mean?	0165-0000-14-080-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association
Drops of Knowledge: Critical Care	0009-9999-15-088-L01-P	1 (0.1)	Waterbury	Application	0009 - University of Connecticut School of Pharmacy
Evaluating The Usefulness of ATP IV and JNC-8 Clinical Practice Guidelines	0159-0000-14-052-L01-P	2 (0.2)	Mars	Application	0159 - Pennsylvania Pharmacists Association
Evaluation and Management of Resistant Hypertension	0165-0000-13-071-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association
Evidence-Based Alternative Medicines for Diabetes, Hypertension and Hyperlipidemia	0204-0000-14-295-L01-P	1.5 (0.15)	Anaheim	Application	0204 - American Society of Health-System Pharmacists
Extra, Extra: Update on Hypertension Guidelines (JNC 8)	0215-0000-14-011-L01-P	1 (0.1)	Arlington	Application	0215 - National Pharmaceutical Association, Inc.
Frequently Encountered Questions in Neurocritical Care	0204-0000-14-256-L01-P	1.5 (0.15)	Anaheim	Application	0204 - American Society of Health-System Pharmacists

Fresh Pharm... A Medication Update	0266-0000-14-033-L01-P	5.25 (0.525)	Danville/PA/w ww.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System
Getting Your Hands Dirty: Practicing Elements of the Cardiovascular Physical Exam	0204-0000-14-313-L01-P	1.5 (0.15)	Ananheim	Application	0204 - American Society of Health-System Pharmacists
GLH Medical-Surgical Symposium	0266-0000-15-026-L01-P	5.15 (0.515)	Lewistown/w ww.geisinger.edu/570-271-6692	Application	0266 - Geisinger Health System
Heart Failure Treatment Across the Continuum of Care	0130-0000-14-073-L01-P	1.5 (0.15)	Cle Elum	Application	0130 - Washington State Pharmacy Association
Heart, Lung, Vascular Update for Primary Care Providers	0064-9999-13-046-L01-P	11 (1.1)	Knoxville	Application	0064 - University of Tennessee College of Pharmacy
Helping Patients to Heart Health: Cardiovascular Cases	0165-0000-14-076-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association
Hypertension Alphabet Soup: Making Sense of ACCF/AHA, ASH/ISH, JNC8, and Other Clinical Practice Guidelines	0202-0000-15-044-L01-P	2 (0.2)	San Diego	Application	0202 - American Pharmacists Association
Hypertension Guidelines	0173-0000-14-009-L01-P	1 (0.1)	Boise www.ishp.shuttlepod.org	Application	0173 - Idaho Society of Health-System Pharmacists
Integrating Obesity and Dyslipidemia Management to Reduce Atherosclerotic Cardiovascular Disease	0280-0000-15-006-L01-P	1.25 (0.125)	Warwick	Application	0280 - American Health Resources
Is Your Blood Pressure on the Rise? New Guidelines in Hypertension Management	0130-0000-14-046-L01-P	1.5 (0.15)	Coeur d'Alene	Application	0130 - Washington State Pharmacy Association
Looking out for your Lungs: Update on COPD Management	0215-0000-14-007-L01-P	1 (0.1)	Arlington	Application	0215 - National Pharmaceutical Association, Inc.
Management of COPD to Improve Patient Outcomes	0280-0000-13-004-L01-P	2 (0.2)	Albany	Application	0280 - American Health Resources
Management of COPD to Improve Patient Outcomes	0280-0000-13-037-L01-P	1.5 (0.15)	Melville	Application	0280 - American Health Resources
Management of COPD to Improve Patient Outcomes	0280-0000-13-028-L01-P	1.5 (0.15)	Plymouth	Application	0280 - American Health Resources
Management of COPD to Improve Patient Outcomes	0280-0000-13-017-L01-P	1.5 (0.15)	Woburn	Application	0280 - American Health Resources

Management of Hypertension in 2014	0047-9999-14-013-L01-P	1 (0.1)	Fargo	Application	0047 - North Dakota State University College of Health Professions School of Pharmacy
Management of Patients with Heart Failure and Valvular Disease: Using the Recently Updated ACC/AHA Guidelines to Optimize Patient Care	0217-9999-14-076-L01-P	1 (0.1)	Chapel Hill	Application	0217 - American College of Clinical Pharmacy
Managing Complications Associated with Mechanical Circulatory Support and Cardiac Transplantation: Roles of the Inpatient and Ambulatory Care Pharmacist	0204-0000-14-264-L01-P	1.5 (0.15)	Anaheim	Application	0204 - American Society of Health-System Pharmacists
Managing Heart Failure: Guideline-Directed Medical Therapy	0053-9999-14-001-L01-P	1 (0.1)	Tulsa	Application	0053 - University of Oklahoma College of Pharmacy
Managing hypertension in 2015	0047-0000-15-059-L01-P	1.5 (0.15)	Fargo	Application	0047 - North Dakota State University College of Health Professions School of Pharmacy
Managing patients with anticoagulants	0047-0000-15-062-L01-P	1.5 (0.15)	Fargo	Application	0047 - North Dakota State University College of Health Professions School of Pharmacy
Managing Stable COPD – Guideline Recommendations & Therapeutic Considerations	0280-0000-15-090-L01-P	1.5 (0.15)	Randolph	Application	0280 - American Health Resources
Measuring and Reversing Antiplatelet or Anticoagulant Agents: Crafting a Management Plan	0204-0000-13-342-L01-P	1.5 (0.15)	Orlando	Application	0204 - American Society of Health-System Pharmacists
Medication Therapy Management for Patients with Cardiovascular Disorders	0165-0000-13-075-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association

New Developments in Treatment of Hypercholesterolemia	0280-0000-15-093-L01-P	1.5 (0.15)	Springfield	Application	0280 - American Health Resources
New Guidelines for the Treatment of High Cholesterol and Hypertension: Opinions and Controversy	0204-0000-14-299-L01-P	2 (0.2)	Anaheim	Application	0204 - American Society of Health-System Pharmacists
New Hypertension and Cholesterol Guidelines: Stay Tuned...	0204-0000-13-127-L01-P	2 (0.2)	Minneapolis	Application	0204 - American Society of Health-System Pharmacists
New JNC8 Hypertension Guidelines, a Definitive Answer?	0154-0000-13-108-L01-P	1 (0.1)	Frisco	Application	0154 - Texas Pharmacy Association
Obstructive Sleep Apnea - What is it and Why is it Important?	0165-0000-15-042-L01-P	1 (0.1)	St. Augustine	Application	0165 - Florida Pharmacy Association
Oral anticoagulants for VTE treatment: Evaluating the Options	0280-0000-15-039-L01-P	1 (0.1)	Portland	Application	0280 - American Health Resources
Out With The Old, In With The New: Updates in Guidelines for HTN and Lipids	0154-0000-15-044-L01-P	1 (0.1)	The Woodlands	Application	0154 - Texas Pharmacy Association
Pediatric Pharmacy Preparatory Review Course—PICU I, PICU II and Cardiology	0217-0000-15-037-L01-P	4 (0.4)	Rosemont	Application	0217 - American College of Clinical Pharmacy
Pediatric Pharmacy Preparatory Review Course—Pulmonary, Pediatric Transplant and Neonatology	0217-0000-15-038-L01-P	3.5 (0.35)	Rosemont	Application	0217 - American College of Clinical Pharmacy
Pharmacogenomics Applications and Opportunities for Pharmacists: Focus on Patients with Cardiovascular Disease	0159-0000-15-022-L01-P	1.5 (0.15)	Harrisburg	Application	0159 - Pennsylvania Pharmacists Association
Pharmacotherapy of Asthma	0165-0000-15-039-L01-P	1 (0.1)	St. Augustine	Application	0165 - Florida Pharmacy Association
Pharmacotherapy of COPD	0165-0000-14-053-L01-P	1.5 (0.15)	Ft. Lauderdale	Application	0165 - Florida Pharmacy Association
Pharmacotherapy Preparatory Review and Recertification Course—Cardiology I and Cardiology II	0217-0000-15-020-L01-P	3 (0.3)	Rosemont	Application	0217 - American College of Clinical Pharmacy
Pharmacotherapy Preparatory Review and Recertification Course—Cardiology I and Cardiology II	0217-0000-14-029-L01-P	3 (0.3)	Rosemont/ww w.accp.com/u t	Application	0217 - American College of Clinical Pharmacy
Pulmonary Arterial Hypertension: Examining the Therapeutic Options	0280-0000-15-083-L01-P	2 (0.2)	Cromwell	Application	0280 - American Health Resources

Pulmonary Skills Workshop	0165-0000-15-044-L01-P	1.5 (0.15)	St. Augustine	Application	0165 - Florida Pharmacy Association
Reducing Stroke Risk in Patients with Atrial Fibrillation	0165-0000-13-070-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association
Refresh Pharm... A Medication Update	0266-0000-14-033-L01-P	5.25 (0.525)	Danville/PA/www.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System
Reversal of New Anti-Thrombotic Agents	0159-0000-14-001-L01-P	1 (0.1)	Bedford	Application	0159 - Pennsylvania Pharmacists Association
Review of 2013 Cholesterol Guidelines	0215-0000-14-002-L01-P	1 (0.1)	Arlington	Application	0215 - National Pharmaceutical Association, Inc.
Review of Updated Hypertension Guidelines	0172-0000-14-006-L01-P	1 (0.1)	Pensacola	Application	0172 - Alabama Society of Health-System Pharmacists
Review of Updated Lipid Guidelines	0172-0000-14-005-L01-P	1 (0.1)	Pensacola	Application	0172 - Alabama Society of Health-System Pharmacists
Riding the Wave of Change: Caring for Anticoagulation Patients 2014	0204-0000-14-293-L01-P	2 (0.2)	Anaheim	Application	0204 - American Society of Health-System Pharmacists
Shorter Door-to Needle, Longer Window: Updates on the American Heart and Stroke Association (AHA/ASA) Acute Stroke Treatment Guidelines	0163-9999-13-072-L01-P	1 (0.1)	Melbourne	Application	0163 - Florida Society of Health-System Pharmacists, Inc.
Stopping Medications in Older Adults: Why, When, and How	0204-0000-13-360-L01-P	2 (0.2)	Orlando	Application	0204 - American Society of Health-System Pharmacists
The Assessment and Management of Tobacco Dependence	0165-0000-15-043-L01-P	1.5 (0.15)	St. Augustine	Application	0165 - Florida Pharmacy Association
The Continuum of Care for Cystic Fibrosis Patients	0165-0000-14-049-L01-P	1.5 (0.15)	Ft. Lauderdale	Application	0165 - Florida Pharmacy Association
The Management of Elevated Triglycerides	0202-0000-15-076-L01-P	2 (0.2)	San Diego	Application	0202 - American Pharmacists Association
The Management of Hyperlipidemia	0165-0000-13-077-L01-P	1.5 (0.15)	Destin	Application	0165 - Florida Pharmacy Association
The Quality Crusade: Using population health strategies to provide patient-centered care	0266-0000-14-024-L01-P	6 (0.6)	Williamsport/www.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System
The Quality Crusade: Using population health strategies to provide patient-centered care	0266-0000-14-014-L01-P	6 (0.6)	Williamsport/www.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System

The Treatment of Venous Thromboembolism (VTE): Has Warfarin Met Its Match?	0047-9999-14-015-L01-P	1.5 (0.15)	Fargo	Application	0047 - North Dakota State University College of Health Professions School of Pharmacy
Turn the Beat Around: Strategies to Effectively Manage Arrhythmias	0204-0000-13-240-L01-P	1.75 (0.175)	Orlando	Application	0204 - American Society of Health-System Pharmacists
Update on Management of Hypertension and Dyslipidemia in Patients with Diabetes	0280-0000-14-085-L01-P	1 (0.1)	Westford	Application	0280 - American Health Resources
Updates in Pulmonary Arterial Hypertension	0204-0000-14-266-L01-P	1.5 (0.15)	Anaheim	Application	0204 - American Society of Health-System Pharmacists
Updates in the Management of Acute Coronary Syndrome	0136-0000-15-023-L01-P	1 (0.1)	Atlantic City	Application	0136 - New Jersey Pharmacists Association
Updates on the Prevention of Bleeding and Reversal Strategies for Oral Anticoagulants	0027-0000-14-007-L01-P	1 (0.1)	Boston	Application	0027 - Northeastern University Bouve College of Health Sciences School of Pharmacy
Use of Dietary Supplements in Managing Chronic Diseases	0202-0000-15-075-L01-P	2 (0.2)	San Diego	Application	0202 - American Pharmacists Association
Utilizing GOLD Guidelines to Improve COPD Outcomes	0280-0000-15-026-L01-P	2 (0.2)	Albany	Application	0280 - American Health Resources
Utilizing GOLD Guidelines to Improve COPD Outcomes: 2015 Update	0280-0000-15-031-L01-P	2 (0.2)	Woburn	Application	0280 - American Health Resources
What Pharmacists Can Do to Improve Heart Failure Outcomes?	0215-0000-15-017-L01-P	2 (0.2)	Orlando	Application	0215 - National Pharmaceutical Association, Inc.
WPQC Rollercoaster Rush!	0175-0000-14-810-L04-P	4.25 (0.425)	Wisconsin Dells	Application	0175 - Pharmacy Society of Wisconsin
X Marks the Clot: New Oral Anticoagulants for the Treatment and Secondary Prevention of VTE	0204-0000-13-292-L01-P	2 (0.2)	Orlando	Application	0204 - American Society of Health-System Pharmacists
2013 From Theory to Practice: Clinical Reasoning Series in Ambulatory Care Pharmacy ♦ Evidence-Based Screening and Prevention Strategies	0217-0000-13-109-L01-P	6 (0.6)	Albuquerque, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy

2014 Updates to the Updates in Ambulatory Care Pharmacy Webinar	0217-0000-14-052-L01-P	3 (0.3)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
2014 Updates to the Updates in Pharmacotherapy Webinar	0217-0000-14-051-L01-P	3 (0.3)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
2015 From Theory to Bedside: Clinical Reasoning Series Heart Failure: Current and Emerging Management Strategies	0217-0000-15-111-L01-P	6 (0.6)	San Francisco www.accp.com/gc	Application	0217 - American College of Clinical Pharmacy
2015 Updates Plus in Ambulatory Care Pharmacy Webinar	0217-0000-15-066-L01-P	2 (0.2)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
2015 Updates Plus in Pharmacotherapy Webinar	0217-0000-15-065-L01-P	2 (0.2)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
24th Annual Topics in the Tropics: A CME Conference for Primary Care Providers	0266-0000-15-022-L01-P	18 (1.8)	Punta Cana/www.geisinger.edu/570-271-6692	Application	0266 - Geisinger Health System
2nd Annual Time is Brain: Updates on Stroke Care	0266-0000-14-026-L05-P	5 (0.5)	Danville/www.geisinger.edu/570-271-6692	Application	0266 - Geisinger Health System
Ambulatory Care Pharmacy Preparatory Review and Recertification Course--Drug Information: Evidenced Based Medicine, Research, and HIPPA, Cardiology I, and Cardiology II	0217-0000-14-017-L01-P	3.5 (0.35)	Rosemont/www.accp.com/unit	Application	0217 - American College of Clinical Pharmacy

Ambulatory Care Pharmacy Preparatory Review and Recertification Course-- Pulmonary Disorders and Smoking Cessation, Biostatistics: A Refresher, Study Designs: Fundamentals of Interpretation	0217-0000-14-016-L01-P	4 (0.4)	Rosemont/www.accp.com/ut	Application	0217 - American College of Clinical Pharmacy
Cardiology PRN Focus Session—Continuity of Cardiovascular Care: Considering Inpatient and Outpatient Perspectives for Heart Failure, Valve Disease, and Uncontrolled Cardiovascular Risk	0217-0000-14-121-L01-P	2 (0.2)	Austin, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Cardiology PRN Focus Session ♦ High-Risk Patients and High-Risk Medications: Role of the Cardiovascular Clinical Pharmacist	0217-0000-13-121-L01-P	2 (0.2)	Albuquerque, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Curricular Track I: Challenges in Drug Dosing for Complicated Patient Populations ♦ Anticoagulants in Special Populations	0217-0000-13-114-L01-P	1.5 (0.15)	Albuquerque, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Curricular Track III: Clinical Controversies—Conundrums in Published Clinical Guidelines	0217-0000-14-117-L01-P	1.5 (0.15)	Austin, www.accp.com/am	Application	0217 - American College of Clinical Pharmacy
Fresh Pharm... A Medication Update	0266-0000-14-033-L01-P	5.25 (0.525)	Danville/PA/www.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System
GLH Medical-Surgical Symposium	0266-0000-15-026-L01-P	5.15 (0.515)	Lewistown/www.geisinger.edu/570-271-6692	Application	0266 - Geisinger Health System
Hypertension Guidelines	0173-0000-14-009-L01-P	1 (0.1)	Boise www.ishp.shuttlepod.org	Application	0173 - Idaho Society of Health-System Pharmacists
JNC 8: Worth the wait or too little too late?	0401-0000-14-054-L01-P	1 (0.1)	www.cedrugstorenews.com	Application	0401 - Drug Store News

Last-Chance Ambulatory Care Pharmacy Review Webinar – Biostatistics and Cardiology	0217-0000-15-167-L01-P	3 (0.3)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
Last-Chance Ambulatory Care Review Webinar – Cardiology and Biostatistics	0217-0000-14-158-L01-P	3 (0.3)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
Last-Chance Critical Care Pharmacy Review Webinar – Cardiology and Shock Syndromes	0217-0000-15-158-L01-P	3 (0.3)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
Last-Chance Pharmacotherapy Review Webinar – Biostatistics and Cardiology	0217-0000-14-157-L01-P	3 (0.3)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
Last-Chance Pharmacotherapy Review Webinar – Biostatistics and Cardiology	0217-0000-15-170-L01-P	3 (0.3)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
Management of Patients with Heart Failure and Valvular Disease: Using the Recently Updated ACC/AHA Guidelines to Optimize Patient Care	0217-9999-14-076-L01-P	1 (0.1)	http://trianglepharmacist.org	Application	0217 - American College of Clinical Pharmacy
Pharmacotherapy Preparatory Review and Recertification Course—Cardiology I and Cardiology II	0217-0000-14-029-L01-P	3 (0.3)	Rosemont/www.accp.com/ut	Application	0217 - American College of Clinical Pharmacy
resh Pharm... A Medication Update	0266-0000-14-033-L01-P	5.25 (0.525)	Danville/PA/www.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System
Systems-Based Approaches to Improve Outcomes in Idiopathic Pulmonary Fibrosis	0255-0000-15-044-L01-P	1 (0.1)	www.primeinc.org/webinars	Application	0255 - PRIME Education, Inc.
The Quality Crusade: Using population health strategies to provide patient-centered care	0266-0000-14-024-L01-P	6 (0.6)	Williamsport/www.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System
The Quality Crusade: Using population health strategies to provide patient-centered care	0266-0000-14-014-L01-P	6 (0.6)	Williamsport/www.geisinger.org/570-271-6692	Application	0266 - Geisinger Health System
Updates Plus in Ambulatory Care Pharmacy Webinar	0217-0000-16-078-L01-P	2 (0.2)	www.accp.com	Application	0217 - American College of Clinical Pharmacy
Updates Plus in Pharmacotherapy Webinar	0217-0000-16-077-L01-P	2 (0.2)	www.accp.com	Application	0217 - American College of Clinical Pharmacy

Total Hours: 484.8

Appendix G-5

ACPE PLAN Programming Home Study Knowledge Activity

Title	UAN	Hrs (CEUs)	Activity Type	Provider Description
13th Annual UC Davis Clinical Pharmacotherapy Conference	0277-0000-14-003-L01-P	3.5 (0.35)	Knowledge	0277 - University of California Davis Health System Department of Pharmacy
13th Annual UC Davis Clinical Pharmacotherapy Conference	0277-0000-15-003-L01-P	3.5 (0.35)	Knowledge	0277 - University of California Davis Health System Department of Pharmacy
2013 ASHP Pharmacotherapy Recertification Literature Study, Module 2B	0204-0000-13-943-H01-P	5 (0.5)	Knowledge	0204 - American Society of Health-System Pharmacists
2013 From Theory to Practice: Clinical Reasoning Series in Ambulatory Care Pharmacy Evidence-Based Screening and Prevention Strategies	0217-0000-13-109-L01-P	6 (0.6)	Application	0217 - American College of Clinical Pharmacy
2014 Updates to the Updates in Ambulatory Care Pharmacy Webinar	0217-0000-14-052-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
2014 Updates to the Updates in Pharmacotherapy Webinar	0217-0000-14-051-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
2015 From Theory to Bedside: Clinical Reasoning Series Heart Failure: Current and Emerging Management Strategies	0217-0000-15-111-L01-P	6 (0.6)	Application	0217 - American College of Clinical Pharmacy
2015 Updates Plus in Ambulatory Care Pharmacy Webinar	0217-0000-15-066-L01-P	2 (0.2)	Application	0217 - American College of Clinical Pharmacy
2015 Updates Plus in Pharmacotherapy Webinar	0217-0000-15-065-L01-P	2 (0.2)	Application	0217 - American College of Clinical Pharmacy
24th Annual Topics in the Tropics: A CME Conference for Primary Care Providers	0266-0000-15-022-L01-P	18 (1.8)	Application	0266 - Geisinger Health System
2nd Annual Time is Brain: Updates on Stroke Care	0266-0000-14-026-L05-P	5 (0.5)	Application	0266 - Geisinger Health System

A Pharmacist's Role in the Prevention and Management of Perioperative Atrial Fibrillation and Flutter	0100-0000-15-044-H04-P	0.75 (0.075)	Knowledge	0100 - Arizona Pharmacy Association
Acute Coronary Syndrome: From Door to Discharge	0289-0000-13-012-H01-P	2 (0.2)	Knowledge	0289 - PESI, Inc.
Adult Acute Cardiac Care	0741-0000-13-007-L04-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Advances in Anticoagulation Therapy	0202-0000-14-162-L01-P	1.5 (0.15)	Knowledge	0202 - American Pharmacists Association
Advances in the Pharmacotherapy of Cardiovascular Diseases	0217-0000-15-149-L01-P	1.5 (0.15)	Knowledge	0217 - American College of Clinical Pharmacy
AFIB and C-Diff	0854-0000-15-006-L01-P	3 (0.3)	Knowledge	0854 - Florida Association of Consultant Pharmacists
AJHP 70: May 15, 2013 New Approaches to Reversing Oral Anticoagulant Therapy	0204-0000-13-442-H01-P	2.5 (0.25)	Knowledge	0204 - American Society of Health-System Pharmacists
Ambulatory Care Pharmacy Preparatory Review and Recertification Course--Drug Information: Evidenced Based Medicine, Research, and HIPPA, Cardiology I, and Cardiology II	0217-0000-14-017-L01-P	3.5 (0.35)	Application	0217 - American College of Clinical Pharmacy
Ambulatory Care Pharmacy Preparatory Review and Recertification Course--Pulmonary Disorders and Smoking Cessation, Biostatistics: A Refresher, Study Designs: Fundamentals of Interpretation	0217-0000-14-016-L01-P	4 (0.4)	Application	0217 - American College of Clinical Pharmacy
An Overview of Hypertension Management	0165-0000-13-111-H01-P	3 (0.3)	Knowledge	0165 - Florida Pharmacy Association
AN OVERVIEW OF HYPERTENSION MANAGEMENT	0165-0000-14-124-H01-P	3 (0.3)	Knowledge	0165 - Florida Pharmacy Association
An Update on the Current Practice for Management of an Acute Ischemic Stroke	0470-9999-13-007-L01-P	1.5 (0.15)	Knowledge	0470 - Medication Management Center

Answering the Call: The Role of Health-System Pharmacists to Improve Use of Target-Specific Oral Anticoagulants	0530-9999-15-002-H01-P	1 (0.1)	Knowledge	0530 - Global Education Group
ANTI-ANXIETY DRUGS	0751-0000-13-041-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Anticoagulant Reversal	0173-0000-13-015-L04-P	1 (0.1)	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Anticoagulants Drug Review	0096-0000-15-016-H01-P	0.75 (0.075)	Knowledge	0096 - Texas Tech University Health Sciences Center School of Pharmacy
Anticoagulants: The Rapidly Changing Landscape	0372-0000-13-016-L01-P	2 (0.2)	Knowledge	0372 - Rx School
Anticoagulation Therapy Management Program	0120-9999-16-201-H01-P	40 (4)	Knowledge	0120 - Pharmacists Education Foundation
Antioxidants: A Balancing Act with Free Radicals	0751-0000-13-070-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Approach to Hypertensive Emergencies	0513-0000-13-147-H01-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Approved and Emerging Treatments for Cystic Fibrosis: Underlying Cause (2250.42)	0052-0000-15-115-H01-P	3 (0.3)	Knowledge	0052 - Projects In Knowledge, Inc.
Apps in HealthCare	0826-9999-14-006-H01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Apps in HealthCare	0826-9999-14-006-L01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Apps in HealthCare	0826-9999-14-006-L01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Aspergillus Infections: Presentation and Management	0513-0000-14-018-H01-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Assessing Oral Anticoagulants: A Review for the Pharmacist	0120-0000-13-220-H01-P	1.5 (0.15)	Knowledge	0120 - Pharmacists Education Foundation

Assessing The Risk of Stroke in AF and The Risk of VTE: Implications for Patient Selection and Management (2241.31)	0052-0000-15-014-H01-P	1.5 (0.15)	Knowledge	0052 - Projects In Knowledge, Inc.
Atrial Fibrillation Management: Current Challenges	0256-0000-13-687-H01-P	2 (0.2)	Knowledge	0256 - American Heart Association
Atrial Fibrillation Treatment in Older Adults	0372-0000-14-019-L01-P	2 (0.2)	Knowledge	0372 - Rx School
Atrial Fibrillation: It's not so Simple Anymore	0289-0000-13-015-H01-P	2 (0.2)	Knowledge	0289 - PESI, Inc.
Basic Review & Essentials of Antiarrhythmic Medications	0096-0000-15-012-H01-P	1 (0.1)	Knowledge	0096 - Texas Tech University Health Sciences Center School of Pharmacy
Beyond the Device: Comprehensive Care of Implantable Cardioverter Defibrillator Patients	0845-0000-15-082-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Bringing It All Together	0741-0000-15-023-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc
Calorie Restrictive Diets: Medical Benefits & Risks	0826-9999-14-017-H01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Calorie Restrictive Diets: Medical Benefits & Risks	0826-9999-14-017-L01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Cardiac Assessment of CHD: What You Need to Know	0263-0000-13-407-L01-P	1.5 (0.15)	Knowledge	0263 - Contemporary Forums
Cardiac Effects of Tobacco	0022-0000-13-059-H01-P	0.75 (0.075)	Knowledge	0022 - University of Kentucky College of Pharmacy
Cardiac Pharmacology: From Molecular Biology to Bedside Application	0289-0000-13-011-H01-P	3 (0.3)	Knowledge	0289 - PESI, Inc.
Cardiac Pharmacology: From Molecular Biology to Bedside Application	0289-0000-14-165-H01-P	3 (0.3)	Knowledge	0289 - PESI, Inc.
Cardiology PRN Focus Session—Continuity of Cardiovascular Care: Considering Inpatient and Outpatient Perspectives for Heart Failure, Valve Disease, and Uncontrolled Cardiovascular Risk	0217-0000-14-121-L01-P	2 (0.2)	Application	0217 - American College of Clinical Pharmacy

Cardiology PRN Focus Session ♦ High-Risk Patients and High-Risk Medications: Role of the Cardiovascular Clinical Pharmacist	0217-0000-13-121-L01-P	2 (0.2)	Application	0217 - American College of Clinical Pharmacy
Cardiology PRN Focus Session—Making Bloody Sense of Antithrombotic Therapy During Percutaneous	0217-0000-15-126-L01-P	1.5 (0.15)	Knowledge	0217 - American College of Clinical Pharmacy
Cardiovascular Assessment in Emergency Situations	0289-0000-13-013-H01-P	2 (0.2)	Knowledge	0289 - PESI, Inc.
Cardiovascular Conditions	0430-0000-14-039-H01-P	3 (0.3)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Cardiovascular Disease and Treatment	0042-0000-14-013-L01-P	5 (0.5)	Knowledge	0042 - Arnold and Marie Schwartz College of Pharmacy and Health Sciences of Long Island University
Cardiovascular Disease Part 1: Risk Reduction in Primary Prevention Patients	0741-0000-15-001-H01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Disease Part 1: Risk Reduction in Primary Prevention Patients	0741-0000-15-001-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Disease Part 2: Management of Heart Failure, Stable Ischemic Heart Disease, and Peripheral Arterial Disease	0741-0000-15-002-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Disease Part 3: Updates in Atrial Fibrillation, Secondary Prevention of Stroke, and Special Populations	0741-0000-15-003-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Disease: New Updates & Guidelines	0826-9999-13-042-H01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
Cardiovascular Disease: New Updates & Guidelines	0826-9999-13-042-L01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
Cardiovascular Disease: New Updates & Guidelines	0826-9999-13-042-L01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	Knowledge	0263 - Contemporary Forum

Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-14-458-L01-P	3.5 (0.35)	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-13-105-L01-P	6.3 (0.63)	Knowledge	0289 - PESI, Inc.
Cardiovascular Pharmacology for Advanced Practice Clinicians	0289-0000-14-014-H01-P	6.3 (0.63)	Knowledge	0289 - PESI, Inc.
Cardiovascular Therapeutics Update: Heart Failure, Anticoagulation, and Arrhythmias	0741-0000-15-028-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	Knowledge	0263 - Contemporary Forums
Cardiovascular Pharmacology (Part 2): A Case Study Approach	0263-0000-13-373-L01-P	3.5 (0.35)	Knowledge	0263 - Contemporary Forums
Care of the COPD Patient	0422-0000-15-222-H01-P	1 (0.1)	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center
Case Study in Cystic Fibrosis: Management of Cystic Fibrosis in a School-Age Child (2250.62)	0052-0000-15-135-H01-P	1 (0.1)	Knowledge	0052 - Projects In Knowledge, Inc.
Case Study in Cystic Fibrosis: Management of Cystic Fibrosis in an Adolescent Patient (2250.63)	0052-0000-15-136-H01-P	1 (0.1)	Knowledge	0052 - Projects In Knowledge, Inc.
Case Study in Idiopathic Pulmonary Fibrosis: Idiopathic Pulmonary Fibrosis without Diagnostic Radiology Findings (2268.63)	0052-0000-15-212-H01-P	1 (0.1)	Knowledge	0052 - Projects In Knowledge, Inc.
Case Study in Idiopathic Pulmonary Fibrosis: Typical Presentation, Role of Surgical Lung Biopsy, and Acute Exacerbation (2268.62)	0052-0000-15-211-H01-P	1.5 (0.15)	Knowledge	0052 - Projects In Knowledge, Inc.
Case Study: Management of Cystic Fibrosis in an Adult (2250.64)	0052-0000-15-137-H01-P	1 (0.1)	Knowledge	0052 - Projects In Knowledge, Inc.
CFTR Mutations in the Pathophysiology of Cystic Fibrosis (2250.22)	0052-0000-15-113-H01-P	2.75 (0.275)	Knowledge	0052 - Projects In Knowledge, Inc.

Chronic Heart Failure	0120-9999-16-204-H04-P	40 (4)	Knowledge	0120 - Pharmacists Education Foundation
Clinical Controversies in Cardiovascular Disease	0067-0000-15-021-H01-P	1 (0.1)	Knowledge	0067 - University of Texas at Austin College of Pharmacy
Clinical Overview of the Use of Novel Oral Anticoagulants	0202-0000-15-177-H01-P	1 (0.1)	Knowledge	0202 - American Pharmacists Association
Clinical Review Guide: AFIB	0256-0000-13-685-H01-P	1.25 (0.125)	Knowledge	0256 - American Heart Association
Clinical Updates in Anticoagulation Therapy for Stroke Prevention	0060-9999-15-014-H01-P	1 (0.1)	Knowledge	0060 - University of Rhode Island College of Pharmacy
Closing the Gap: Expert Analysis of New and Emerging Therapies Targeting LDL-C to Reduce Cardiovascular Risk	0816-9999-15-054-H01-P	2.75 (0.275)	Knowledge	0816 - Medical Education Resources, Inc.
Comorbidities and COPD	0845-0000-15-104-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Complementary Medicines: What Really Works?	0492-0000-14-022-H04-P	6 (0.6)	Knowledge	0492 - Institute for Brain Potential
Contemporary Management of Hypertension and Cholesterol: Implications for Cardiovascular Prevention and System Approaches to Improve Patient Care	0741-0000-14-014-H01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Contemporary Management of Hypertension and Cholesterol: Implications for Cardiovascular Prevention and System Approaches to Improve Patient Care	0741-0000-14-014-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
COPD 2013: An Update on Treatment and Newly Approved Medications for Pharmacists	0202-0000-13-225-H01-P	2 (0.2)	Knowledge	0202 - American Pharmacists Association
COPD: Taking a Fresh Look at a Continually Increasing Problem - Best-Practice Strategies for Primary Care Providers and Pharmacists #1	0347-0000-14-016-H01-P	0.25 (0.025)	Knowledge	0347 - Foundation for Care Management

COPD: Taking a Fresh Look at a Continually Increasing Problem - Best-Practice Strategies for Primary Care Providers and Pharmacists #2	0347-0000-14-017-H01-P	0.25 (0.025)	Knowledge	0347 - Foundation for Care Management
COPD: Taking a Fresh Look at a Continually Increasing Problem - Best-Practice Strategies for Primary Care Providers and Pharmacists #3	0347-0000-14-018-H01-P	0.25 (0.025)	Knowledge	0347 - Foundation for Care Management
CPSL 2015 Annual Conference	0266-0000-15-006-L01-P	6 (0.6)	Knowledge	0266 - Geisinger Health System
Current & Emerging Treatments for Cystic Fibrosis: Symptom and Nutritional Management (2250.41)	0052-0000-15-116-H01-P	3 (0.3)	Knowledge	0052 - Projects In Knowledge, Inc.
Current and Investigational Treatment Options for Idiopathic Pulmonary Fibrosis (2268.41)	0052-0000-15-208-H01-P	2.75 (0.275)	Knowledge	0052 - Projects In Knowledge, Inc.
Current Drug Management of Congestive Heart Failure	0513-0000-14-148-H01-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Curricular Track I: Challenges in Drug Dosing for Complicated Patient Populations ♦ Anticoagulants in Special Populations	0217-0000-13-114-L01-P	1.5 (0.15)	Application	0217 - American College of Clinical Pharmacy
Curricular Track III: Clinical Controversies—Conundrums in Published Clinical Guidelines	0217-0000-14-117-L01-P	1.5 (0.15)	Application	0217 - American College of Clinical Pharmacy
Curricular Track III: Clinical Controversies—Fast and Furious	0217-0000-14-102-L01-P	1.5 (0.15)	Knowledge	0217 - American College of Clinical Pharmacy
Demystifying Cardiac Assist Devices	0289-0000-13-016-H01-P	2 (0.2)	Knowledge	0289 - PESI, Inc.
Devices Made Easy: A Review of Inhaler Technique and Patient Adherence in COPD	0290-0000-15-053-H01-P	2 (0.2)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
Devices Made Easy: Optimizing Inhaler Technique and Patient Adherence in COPD	0290-0000-15-098-H01-P	1 (0.1)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
Diagnosis of Idiopathic Pulmonary Fibrosis (2268.31)	0052-0000-15-206-H01-P	1.75 (0.175)	Knowledge	0052 - Projects In Knowledge, Inc.

Dietary Supplements and Cardiovascular Drugs: Balancing the benefits and risks of drug interactions.	0173-0000-13-014-L04-P	1 (0.1)	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Drug Therapy Management Series Part I: Cardiovascular Disorders	0372-0000-14-032-H01-P	5 (0.5)	Knowledge	0372 - Rx School
Dyslipidemia and New Cholesterol Guidelines: What the Primary Care Provider Needs To Know - Case 4	0347-0000-14-024-H01-P	0.25 (0.025)	Knowledge	0347 - Foundation for Care Management
Educating Patients on Appropriate Inhaler Use	0845-0000-16-002-L05-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Epidemiology of Cystic Fibrosis (2250.11)	0052-0000-15-111-H01-P	1.5 (0.15)	Knowledge	0052 - Projects In Knowledge, Inc.
Epidemiology of Idiopathic Pulmonary Fibrosis (2268.11)	0052-0000-15-204-H01-P	1 (0.1)	Knowledge	0052 - Projects In Knowledge, Inc.
Epidemiology of Thromboembolic Diseases: Implications for Prevention and Management (2241.11)	0052-0000-15-012-H01-P	0.5 (0.05)	Knowledge	0052 - Projects In Knowledge, Inc.
Essential Skills in Acute Coronary Syndrome, Cardiac Assessment and Pharmacology	0289-0000-14-029-H01-P	6.7 (0.67)	Knowledge	0289 - PESI, Inc.
Etiology and Pathophysiology of Atrial Fibrillation and Venous Thromboembolism (2241.21)	0052-0000-15-013-H01-P	1 (0.1)	Knowledge	0052 - Projects In Knowledge, Inc.
Etiology and Pathophysiology of Cystic Fibrosis (2250.21)	0052-0000-15-112-H01-P	2.75 (0.275)	Knowledge	0052 - Projects In Knowledge, Inc.
Etiology/Pathophysiology of Idiopathic Pulmonary Fibrosis (2268.21)	0052-0000-15-205-H01-P	1.75 (0.175)	Knowledge	0052 - Projects In Knowledge, Inc.
Examining an Evolving Paradigm in Atrial Fibrillation Treatment: Reducing the Risk of Stroke and Myocardial Infarction: Advocating a Multidisciplinary Strategy for AF Patients With and Without Concomitant CHD	0018-9999-14-066-H01-P	0.5 (0.05)	Knowledge	0018 - Purdue University College of Pharmacy
Examining New Treatment Strategies Aimed at Stroke Prevention in Patients with Atrial Fibrillation: A Multidisciplinary Discussion	0290-0000-14-015-H01-P	2 (0.2)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education

Exercise Therapy in Disease Management	0826-9999-14-037-H01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
Exercise Therapy in Disease Management	0826-9999-14-037-L01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
Expanding Pharmacy-Based Pneumococcal Immunization Services	0202-0000-13-157-H04-P	1.5 (0.15)	Knowledge	0202 - American Pharmacists Association
Expanding Pharmacy-Based Pneumococcal Immunization Services	0202-0000-13-157-L04-P	1.5 (0.15)	Knowledge	0202 - American Pharmacists Association
Fresh Pharm... A Medication Update	0266-0000-14-033-L01-P	5.25 (0.525)	Application	0266 - Geisinger Health System
Getting the Most Out of the Cardiac Monitor	0289-0000-13-014-H01-P	3 (0.3)	Knowledge	0289 - PESI, Inc.
Giving Breath to COPD: A Focus on GOLD 2014	0798-0000-14-192-H01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.
Giving Breath to COPD: A Focus on GOLD 2014	0798-0000-14-192-L01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.
GLH Medical-Surgical Symposium	0266-0000-15-026-L01-P	5.15 (0.515)	Application	0266 - Geisinger Health System
Guidance for Informed and Shared Decision Making about Diagnostic Tools and Treatments for Obstructive Sleep Apnea	0255-0000-13-029-H01-P	1 (0.1)	Knowledge	0255 - PRIME Education, Inc.
Hantavirus Cardiopulmonary Syndrome: Rare but Deadly	0513-0000-13-091-H01-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Heart Failure Patient with Atrial Fibrillation (2267.01)	0052-0000-15-200-H01-P	0.5 (0.05)	Knowledge	0052 - Projects In Knowledge, Inc.
Heart Failure: Challenges New and Old	0256-0000-13-686-H01-P	2 (0.2)	Knowledge	0256 - American Heart Association
Heart Failure: Traditional Therapies and Novel Agents	0480-0000-15-006-H01-P	1 (0.1)	Knowledge	0480 - Southern Illinois University Edwardsville School of Pharmacy
HEART HEALTH	0751-0000-13-068-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)

HeartCode Advanced Cardiovascular Life Support Part 1 Enduring Web Course	0256-0000-14-704-H01-P	10.25 (1.025)	Knowledge	0256 - American Heart Association
High-risk PCI (percutaneous coronary intervention) and Hemodynamic Support	0845-0000-15-004-H04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
High-risk PCI (percutaneous coronary intervention) and Hemodynamic Support	0845-0000-15-004-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	Knowledge	0751 - Institute for Natural Resources (INR)
His Health/Her Health – Medical Challenges in Midlife	0751-0000-14-028-L01-P	6 (0.6)	Knowledge	0751 - Institute for Natural Resources (INR)
Hospital Pharmacy June 2014 Formulary Drug Review: Umeclidinium/Vilanterol	0221-9999-14-059-H01-P	1.5 (0.15)	Knowledge	0221 - Pro CE, Inc.
Hypertension 101: A Review of JNC8	0430-0000-15-014-H01-P	2 (0.2)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Hypertension and Heart Failure	0741-0000-15-021-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Hypertension Guidelines	0173-0000-14-009-L01-P	1 (0.1)	Application	0173 - Idaho Society of Health-System Pharmacists
Hypertension Management	0120-9999-14-210-H01-P	40 (4)	Knowledge	0120 - Pharmacists Education Foundation
Hypertension Management: Making Sense of Guidelines and Therapy Options for the Elderly	0120-0000-15-020-H01-P	1.5 (0.15)	Knowledge	0120 - Pharmacists Education Foundation
Hypertension Today: JNC-8 Evidence-Based Guidelines	0798-0000-14-275-H01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.

HYPERTENSION: CAUSES AND PREVENTION	0751-0000-14-018-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Hypertension: Review of Guidelines and Drug Therapy Management	0513-0000-14-006-H01-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Hypoglycemia and Cardiovascular Disease – Lessons from Outcome Studies	0239-0000-14-109-L01-P	2 (0.2)	Knowledge	0239 - American Diabetes Association
Implications of Early Referral, Coordinated Care, and New Guidelines for PAH in Patients with Rheumatic Diseases	0255-0000-15-055-H01-P	1 (0.1)	Knowledge	0255 - PRIME Education, Inc.
Improving Antithrombotic Care for At-Risk Patients	0430-0000-14-068-H01-P	2 (0.2)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Improving Hypertension Outcomes: The Community Pharmacist’s Involvement	0154-0000-15-056-H01-P	1 (0.1)	Knowledge	0154 - Texas Pharmacy Association
Improving Hypertension Outcomes: The Community Pharmacist’s Involvement	0154-9999-15-056-H01-P	1 (0.1)	Knowledge	0154 - Texas Pharmacy Association
Improving Transitions of Care for Patients with Acute Coronary Syndromes: A Focus on the Role of the Health System and Community Pharmacists on Adherence	0290-0000-14-101-H01-P	2 (0.2)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
Inflammation & Chronic Disease	0826-9999-14-033-H01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-14-033-L01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc.
Inflammation & Chronic Disease	0826-9999-15-018-L01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc.
Innovations in Cholesterol Management: New Medications, Guideline Controversies, and New Evidence	0741-0000-16-001-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Integrative Medicine Approach to Hypertension	0826-9999-13-027-H01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
IPF Case Study in Idiopathic Pulmonary Fibrosis: Managing the Disease Burden of IPF (2268.61)	0052-0000-15-210-H01-P	1.5 (0.15)	Knowledge	0052 - Projects In Knowledge, Inc.

IPF Case Study: Managing Comorbidities and Improving Quality of Life (2204.02)	0052-0000-14-042-H01-P	1.5 (0.15)	Knowledge	0052 - Projects In Knowledge, Inc.
Ischemic Heart Disease and Antiarrhythmic Therapies	0741-0000-14-008-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Ischemic Heart Disease and Antiarrhythmic Therapies	0741-0000-15-022-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
JNC 8: Worth the wait or too little too late?	0401-0000-14-054-L01-P	1 (0.1)	Application	0401 - Drug Store News
JNC8 Evidence-Based Guidelines for Management of Hypertension in Adults: What Pharmacists Need to Know	0136-0000-15-019-H01-P	1 (0.1)	Knowledge	0136 - New Jersey Pharmacists Association
Keeping Pace With the Evolving Treatment Landscape in Idiopathic Pulmonary Fibrosis	0290-9999-15-141-H01-P	2.5 (0.25)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
Last-Chance Ambulatory Care Pharmacy Review Webinar – Biostatistics and Cardiology	0217-0000-15-167-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
Last-Chance Ambulatory Care Review Webinar – Cardiology and Biostatistics	0217-0000-14-158-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
Last-Chance Critical Care Pharmacy Review Webinar – Cardiology and Shock Syndromes	0217-0000-15-158-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
Last-Chance Pharmacotherapy Review Webinar – Biostatistics and Cardiology	0217-0000-14-157-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
Last-Chance Pharmacotherapy Review Webinar – Biostatistics and Cardiology	0217-0000-15-170-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
Late Breakers in Pharmacotherapy, I	0217-0000-15-117-L01-P	1.5 (0.15)	Knowledge	0217 - American College of Clinical Pharmacy
Learn: Rhythm Adult	0256-0000-15-752-H01-P	2.75 (0.275)	Knowledge	0256 - American Heart Association

Little Boy Blue and What It Means to You: Pediatric Cardiology Update	0845-0000-15-003-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
LOSS OF CONTROL: FIGHTING BACK WITH FULL STRENGTH	0751-0000-13-056-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Management of Bone-Mineral-Vascular Disorders: Insights into Chronic Kidney Disease and Cardiovascular Disease	0016-9999-13-035-L01-P	1.5 (0.15)	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Management of COPD to Improve Patient Outcomes	0280-0000-13-055-H01-P	1 (0.1)	Knowledge	0280 - American Health Resources
Management of Patients with Heart Failure and Valvular Disease: Using the Recently Updated ACC/AHA Guidelines to Optimize Patient Care	0217-9999-14-076-L01-P	1 (0.1)	Application	0217 - American College of Clinical Pharmacy
Management Options for Metabolic Syndrome	0372-0000-13-012-H01-P	2 (0.2)	Knowledge	0372 - Rx School
Managing Cardiovascular Risk: The Importance of Lowering LDL Cholesterol and Reaching Treatment Goals for LDL Cholesterol – The Role of the Pharmacist	0430-0000-15-051-H01-P	2 (0.2)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Managing CHF in Older Adults	0175-0000-13-802-H01-P	1 (0.1)	Knowledge	0175 - Pharmacy Society of Wisconsin
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	Knowledge	0263 - Contemporary Forums
Managing Hypertension and Hyperlipidemia	0263-0000-14-465-L01-P	1.25 (0.125)	Knowledge	0263 - Contemporary Forums
Managing Hypertension Using The Guideline Advantage Program	0256-0000-15-755-H01-P	1 (0.1)	Knowledge	0256 - American Heart Association
Managing Hypertriglyceridemia	0045-0000-14-029-L01-P	1 (0.1)	Knowledge	0045 - Albany College of Pharmacy and Health Sciences

Managing Hyponatremia in Cardiorenal Syndromes	0016-9999-13-048-L01-P	1.5 (0.15)	Knowledge	0016 - University of Illinois at Chicago College of Pharmacy
Managing the Complexity of Drug Therapy in Individuals with Cystic Fibrosis (2250.43)	0052-0000-15-117-H01-P	1.75 (0.175)	Knowledge	0052 - Projects In Knowledge, Inc.
Managing the Transition from Pediatric to Adolescent/Adult Care (2250.52)	0052-0000-15-118-H01-P	2.75 (0.275)	Knowledge	0052 - Projects In Knowledge, Inc.
MDMA: Resurgence in Abuse of Ecstasy	0513-0000-15-176-H03-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Medication Management of Patients Undergoing Cardiac Surgery	0204-9999-13-408-H01-P	1 (0.1)	Knowledge	0204 - American Society of Health-System Pharmacists
Meditation	0751-0000-13-074-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Meta-Analysis of Short-Term High Versus Low Doses of Atorvastatin Preventing Contrast-Induced Acute Kidney Injury in Patients Undergoing Coronary Angiography/Percutaneous Coronary Intervention	0238-0000-15-005-H01-P	1 (0.1)	Knowledge	0238 - American College of Clinical Pharmacology
MIA: Medication Issues of Adherence	0026-0000-14-003-H04-P	1 (0.1)	Knowledge	0026 - MCPHS University
Mitral Valve Prolapse: A Common Heart Disorder	0513-0000-13-100-H01-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Motivational Interviewing Techniques for Chronic Disease Management – Focus on Cardiovascular Disease	0009-9999-14-011-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
Move Over Warfarin: A New Era of Treatment Options in Atrial Fibrillation	0100-0000-13-051-H01-P	1 (0.1)	Knowledge	0100 - Arizona Pharmacy Association
MTM Essentials for Anticoagulant Management in Cardiovascular Disease	0009-9999-14-010-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MTM Essentials for Antiplatelet Therapy in Cardiovascular Disease	0009-9999-14-008-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy

MTM Essentials for Atrial Fibrillation and Drug Induced Arrhythmia Management	0009-9999-14-009-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MTM Essentials for Heart Failure Management	0009-9999-14-007-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MTM Essentials for Hypertension Management Part 2: Drug Therapy Considerations	0009-9999-14-006-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MTM Essentials for Hypertension Management-Part 1: Non-pharmacologic Therapy and Geriatric Considerations	0009-9999-14-005-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MTM essentials for management of CAD and PAD	0009-9999-14-004-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MTM Essentials for Smoking Cessation	0009-9999-14-013-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MTM Essentials for Weight Management	0009-9999-14-012-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy

MTM Opportunities in Caring for the Patient with Cardiovascular Disease	0009-9999-15-001-H04-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
MUSIC & THE BRAIN	0751-0000-13-054-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Natural Medicines in the Clinical Management of Hypertension	0422-0000-13-107-H01-P	1 (0.1)	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center
Natural Medicines in the Clinical Management of Hypertension	0422-0000-15-108-H01-P	1 (0.1)	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center
New Anticoagulants & Bleed Management	0173-0000-14-015-L01-P	1 (0.1)	Knowledge	0173 - Idaho Society of Health-System Pharmacists
New Guidelines for Hypertension and Lipids: Application to Care Transitions	0112-0000-14-238-H01-P	1.5 (0.15)	Knowledge	0112 - Michigan Pharmacists Association
New Investigator Award/Lecture—Resistant Hypertension: Determinants, Outcomes and Approaches for Blood Pressure Intransigence	0217-0000-15-177-L01-P	0.5 (0.05)	Knowledge	0217 - American College of Clinical Pharmacy
New Investigator Lecture-- Interleukin-1 blockade in Cardiovascular Disease	0217-0000-13-163-L01-P	1 (0.1)	Knowledge	0217 - American College of Clinical Pharmacy

New Options for Antiplatelet Therapy	0480-0000-14-003-H01-P	1 (0.1)	Knowledge	0480 - Southern Illinois University Edwardsville School of Pharmacy
New Therapeutic Agents Marketed in 2014: Part 1	0202-0000-14-167-H01-P	2 (0.2)	Knowledge	0202 - American Pharmacists Association
Newborn Screening, Diagnosis, & Prognosis of Cystic Fibrosis (2250.31)	0052-0000-15-114-H01-P	1.75 (0.175)	Knowledge	0052 - Projects In Knowledge, Inc.
Non-ST Elevation Acute Coronary Syndromes: Insights from the 2014 ACC/AHA Guidelines Part I – Epidemiology, Pathophysiology, Diagnostic Dilemmas and Risk Stratification of Patients with NSTEMI-ACS	0256-0000-15-819-L01-P	1 (0.1)	Knowledge	0256 - American Heart Association
Non-ST Elevation Acute Coronary Syndromes: Insights from the 2014 ACC/AHA Guidelines Part I – Epidemiology, Pathophysiology, Diagnostic Dilemmas and Risk Stratification of Patients with NSTEMI-ACS	0256-0000-15-820-H01-P	1 (0.1)	Knowledge	0256 - American Heart Association
Non-Valvular Atrial Fibrillation: 2014 Guidelines and Evidence Based Practice Online Course	0256-0000-14-702-H01-P	1.5 (0.15)	Knowledge	0256 - American Heart Association
Nutritional Supplements A-Z	0826-9999-14-013-H01-P	3 (0.3)	Knowledge	0826 - MED2000, Inc.
Nutritional Supplements A-Z	0826-9999-14-013-L01-P	3 (0.3)	Knowledge	0826 - MED2000, Inc.
Nuts, Chocolate and Cardiovascular Health	0513-0000-13-114-H04-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Obesity Management: New Insight & Novel Interventions	0372-0000-13-014-L01-P	1 (0.1)	Knowledge	0372 - Rx School
Omega-3 Fatty Acids	0751-0000-13-075-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Omega-3 Fatty Acids	0826-9999-13-035-H01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Opiates and Hormone Imbalances: Treatment with Compounded Hormones	0201-0000-14-077-H04-P	1.5 (0.15)	Knowledge	0201 - American College of Apothecaries, Inc.

Oral Anticoagulants: Comparing and Contrasting the New Agents	0401-0000-13-056-H01-P	1 (0.1)	Knowledge	0401 - Drug Store News
Oral Anticoagulants: Comparing and Contrasting the New Agents	0401-0000-13-056-L01-P	1 (0.1)	Knowledge	0401 - Drug Store News
PAH Pharmacotherapy: Progress in the Modern Treatment Era (HP Journal Supplement)	0221-9999-13-043-H01-P	1.5 (0.15)	Knowledge	0221 - Pro CE, Inc.
Partnering to Control Hypertension: Teaching Proper Blood Pressure Technique and Understanding Current Treatment Guidelines	0175-0000-15-810-H01-P	1 (0.1)	Knowledge	0175 - Pharmacy Society of Wisconsin
Patient with New Onset Atrial Fibrillation (2267.02)	0052-0000-15-201-H01-P	0.5 (0.05)	Knowledge	0052 - Projects In Knowledge, Inc.
PCSK9 Inhibitors: An Assessment of their Mechanism and Potential Role in Patient Care	0009-0000-15-070-L01-P	1 (0.1)	Knowledge	0009 - University of Connecticut School of Pharmacy
Pharmacist Patient Assessment for Optimizing Self-Care, Part 3 of 4: Evaluation of the Respiratory and Cardiovascular Systems	0063-0000-14-043-H01-P	2 (0.2)	Knowledge	0063 - South Dakota State University College of Pharmacy
Pharmacogenomics, Acute Coronary Syndrome, Parkinson's Disease	0854-0000-15-004-L01-P	3 (0.3)	Knowledge	0854 - Florida Association of Consultant Pharmacists
Pharmacologic Options and Drug Selection Considerations for the Prevention of Thrombotic Cardiovascular Events	0798-0000-15-141-L01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.
Pharmacotherapy Preparatory Review and Recertification Course—Cardiology I and Cardiology II	0217-0000-14-029-L01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
PL VOICES: Improving Outcomes in Heart Failure Patients	0422-0000-14-521-H01-P	1 (0.1)	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center
PL VOICES: Improving Outcomes in Heart Failure Patients	0422-0000-14-521-L01-P	1 (0.1)	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center
PPHN: Update on Pathophysiology and Treatment	0263-0000-13-405-L01-P	1.5 (0.15)	Knowledge	0263 - Contemporary Forums

Practice Strategies for the Treatment of PPHN	0263-0000-15-541-H01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
Practice Strategies for the Treatment of PPHN	0263-0000-15-541-L01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
Practice Strategies for the Treatment of PPHN	0263-0000-15-541-L01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
Preoperative Assessment in the Older Adult	0059-9999-13-115-L01-P	0.75 (0.075)	Knowledge	0059 - Western University of Health Sciences, College of Pharmacy
Preventing and Managing Lung Complications in Individuals with Cystic Fibrosis (2250.53)	0052-0000-15-119-H01-P	3 (0.3)	Knowledge	0052 - Projects In Knowledge, Inc.
Preventing Cardiovascular Disease	0045-0000-14-027-L01-P	1 (0.1)	Knowledge	0045 - Albany College of Pharmacy and Health Sciences
Prevention and Management of Drug-Induced QT Prolongation	0422-0000-15-226-H01-P	1 (0.1)	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center
Prevention and Treatment of Venous Thromboembolism - New Medications and Recommendations	0120-9999-13-209-H01-P	1.5 (0.15)	Knowledge	0120 - Pharmacists Education Foundation
Prognosis of Idiopathic Pulmonary Fibrosis (2268.32)	0052-0000-15-207-H01-P	1.75 (0.175)	Knowledge	0052 - Projects In Knowledge, Inc.
PSW Hypertension & Hyperlipidemia Toolkit Update	0175-0000-14-812-H01-P	1.25 (0.125)	Knowledge	0175 - Pharmacy Society of Wisconsin
PSYCHOLOGY OF AGING	0751-0000-13-052-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Pulmonary Arterial Hypertension (PAH) treatment product administration training and patient assistance/compassionate use program awareness for the Specialty Pharmacist	0535-0000-15-009-H01-P	1.5 (0.15)	Knowledge	0535 - Specialty Pharma Education Center
Pulmonary Arterial Hypertension: Balancing Patient Needs with Pharmacological Complexity	0221-0000-15-264-L01-P	1.5 (0.15)	Knowledge	0221 - Pro CE, Inc.

Pulmonary Arterial Hypertension: Balancing Patient Needs with Pharmacological Complexity	0221-0000-16-019-H01-P	1.5 (0.15)	Knowledge	0221 - Pro CE, Inc.
Quality e-College: Get with the Guidelines-AFIB	0256-0000-15-749-H01-P	0.75 (0.075)	Knowledge	0256 - American Heart Association
Quality eCollege: Get With The Guidelines-Heart Failure	0256-0000-15-756-H01-P	0.5 (0.05)	Knowledge	0256 - American Heart Association
Quality E-College: Get With the Guidelines-Resuscitation	0256-0000-15-753-H01-P	1.25 (0.125)	Knowledge	0256 - American Heart Association
Quality eCollege: Mission Lifeline	0256-0000-15-758-H01-P	0.75 (0.075)	Knowledge	0256 - American Heart Association
Recent Additions to the Drug Therapy Arsenal: 2014 FDA Approvals	0372-0000-15-002-L04-P	2 (0.2)	Knowledge	0372 - Rx School
Recognition and Management of Arrhythmias in the Fetus and Newborn	0263-0000-15-578-L01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
Recognition and Management of Arrhythmias in the Fetus and Newborn	0263-0000-15-578-L01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
Recognition of Drug-Induced Pulmonary Disease and Management of Idiopathic Pulmonary Fibrosis (IPF)	0009-9999-15-036-H01-P	2 (0.2)	Knowledge	0009 - University of Connecticut School of Pharmacy
Reducing the Risk of Stroke in the Management of Atrial Fibrillation	0845-0000-16-001-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Refining the Treatment of Pulmonary Hypertension: Beyond iNO	0263-0000-14-437-L01-P	1 (0.1)	Knowledge	0263 - Contemporary Forums
Relaxation Therapy for Health	0826-9999-14-050-L01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
Research Reveals the Benefits of Meditation	0513-0000-14-105-H04-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
resh Pharm... A Medication Update	0266-0000-14-033-L01-P	5.25 (0.525)	Application	0266 - Geisinger Health System
Respiratory Diseases	0430-0000-14-040-H01-P	2.5 (0.25)	Knowledge	0430 - Postgraduate Healthcare Education, LLC

Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-13-372-L01-P	2.5 (0.25)	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	Knowledge	0263 - Contemporary Forums
Respiratory Pharmacology: A Case Study Approach	0263-0000-14-457-L01-P	2.5 (0.25)	Knowledge	0263 - Contemporary Forums
Scientific Advances Regarding: Sugar, Salt, & Fat	0751-0000-14-009-H01-P	6 (0.6)	Knowledge	0751 - Institute for Natural Resources (INR)
Screening for and Managing Comorbidities in Individuals with Cystic Fibrosis (2250.54)	0052-0000-15-120-H01-P	2.5 (0.25)	Knowledge	0052 - Projects In Knowledge, Inc.
Session 1. Hypertension and Heart Failure	0741-0000-14-007-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Session 3. Cardiovascular Medication Management: Bringing It All Together	0741-0000-14-009-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Session 4 - Improving Outcomes in COPD: An Integrated Approach to Diagnosis and Management	0290-0000-14-067-H01-P	1 (0.1)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
Shifting Paradigms in the Management of Heart Failure and Heart Failure in Special Populations, Special Considerations with Oral Anticoagulants, Antiplatelet Therapy in ACS and Beyond	0741-0000-16-003-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Shifting the Paradigm of Lipid Management in Cardiovascular Disease Risk Reduction: A Patient-Centered Review	0798-0000-15-143-H01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.
Shifting the Paradigm of Lipid Management in Cardiovascular Disease Risk Reduction: A Patient-Centered Review	0798-0000-15-143-L01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.

Sleep Apnea	0845-0000-14-024-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Special Topics in Idiopathic Pulmonary Fibrosis (2268.51)	0052-0000-15-209-H01-P	1.5 (0.15)	Knowledge	0052 - Projects In Knowledge, Inc.
Spirituality & Healing	0751-0000-13-077-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Spotlight Series: Reducing Readmission after Heart Failure - An Evidence Based Approach	0256-0000-15-745-H01-P	1 (0.1)	Knowledge	0256 - American Heart Association
Spotlight Series: Stroke Prevention in Atrial Fibrillation: New Concepts, Treatments, and Challenges	0256-0000-14-705-H01-P	1 (0.1)	Knowledge	0256 - American Heart Association
Staging and Management of Heart Failure	0430-0000-16-006-H01-P	2 (0.2)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Statins: More than just lipid lowering?	0217-9999-14-160-L01-P	1 (0.1)	Knowledge	0217 - American College of Clinical Pharmacy
Stroke Prophylaxis in Atrial Fibrillation: Which oral anticoagulant should my patient use?	0845-0000-15-001-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Success from Failure: 2013 Heart Failure Guidelines from the American Heart Association	0798-0000-14-069-L01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.
Systems-Based Approaches to Improve Outcomes in Idiopathic Pulmonary Fibrosis	0255-0000-15-044-L01-P	1 (0.1)	Application	0255 - PRIME Education, Inc.
TCC - Nutrition for a Healthy Heart	0347-9999-14-026-H01-P	6 (0.6)	Knowledge	0347 - Foundation for Care Management
The Beat Goes On: Pharmacotherapy for Commonly Encountered Arrhythmias	0741-0000-13-016-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
The GOLD Standard - Understanding and Treating COPD	0798-0000-15-017-L01-P	1 (0.1)	Knowledge	0798 - PharmCon, Inc.

The Gut Microbiome	0826-9999-16-004-H01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
The Gut Microbiome	0826-9999-16-004-L01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
The Impact of Direct Oral Anticoagulants in the Managed Care Environment	0290-9999-15-157-H01-P	2 (0.2)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
The Impact of Nutrition on Health	0741-0000-14-006-H01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
THE MEDITERRANEAN DIET: AN APPROACH TO BETTER HEALTH	0751-0000-13-033-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
The Metabolic Syndrome	0826-9999-13-030-H01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
The Mysteries of Coffee & Tea	0751-0000-13-071-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
The Pharmacist's Role in Systolic Heart Failure Management	0063-9999-13-011-H01-P	1.5 (0.15)	Knowledge	0063 - South Dakota State University College of Pharmacy
The Quality Crusade: Using population health strategies to provide patient-centered care	0266-0000-14-014-L01-P	6 (0.6)	Application	0266 - Geisinger Health System
The Quality Crusade: Using population health strategies to provide patient-centered care	0266-0000-14-024-L01-P	6 (0.6)	Application	0266 - Geisinger Health System
The Role of Quality Improvement in Advancing Cystic Fibrosis Care (2250.55)	0052-0000-15-121-H01-P	2.75 (0.275)	Knowledge	0052 - Projects In Knowledge, Inc.
The Role of Vitamin K in Warfarin Patients	0422-0000-15-241-H01-P	1 (0.1)	Knowledge	0422 - Pharmacist's Letter Therapeutic Research Center
The Specialty Pharmacist's role in the Management of Pulmonary Arterial Hypertension (PAH) in Special Patient Populations	0761-9999-13-124-H01-P	2 (0.2)	Knowledge	0761 - Educational Review Systems

The Ultimate Weight Loss & Weight Management Bootcamp	0826-9999-13-032-H01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc.
The Ultimate Weight Loss & Weight Management Bootcamp	0826-9999-13-032-L01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc.
The Wait is Over: New Recommendations for Hypertension and Dyslipidemia and Implications for Patient Care	0741-0000-14-004-H01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
The Wait is Over: New Recommendations for Hypertension and Dyslipidemia and Implications for Patient Care	0741-0000-14-004-L01-P	5 (0.5)	Knowledge	0741 - University Learning Systems, Inc.
Therapeutic Frontiers Award Lecture -- Barry Massie M.D.: A Career at the Frontier of Heart Failure Research	0217-0000-14-099-L01-P	0.75 (0.075)	Knowledge	0217 - American College of Clinical Pharmacy
Transitions of Care for COPD Patients	0845-0000-16-003-L05-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Transitions of Care for Patients with Acute Coronary Syndromes: The Role of Health-System and Community Pharmacists in Adherence to Antiplatelet Therapy	0290-0000-14-078-H01-P	2 (0.2)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
Transitions of Care: The Health System and Community Pharmacist's Role in Stroke Prevention – On demand webinar	0290-0000-14-061-H01-P	1 (0.1)	Knowledge	0290 - Pharmacy Times Office of Continuing Professional Education
Treatment- and Disease-Related Cardiotoxicity in the Oncology Setting	0429-9999-15-008-H01-P	1 (0.1)	Knowledge	0429 - Meniscus Educational Institute
Triglyceride-rich Lipoproteins and Cardiovascular Disease: Importance and Management Update for Pharmacists	0430-0000-16-009-H01-P	2 (0.2)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Understanding Anticoagulation: A guide to applying the PSW Pocketbook Toolkit to Clinical Practice	0175-0000-13-816-H01-P	0.5 (0.05)	Knowledge	0175 - Pharmacy Society of Wisconsin
UNDERSTANDING ANXIETY	0751-0000-13-050-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)

Understanding Cholesterol	0751-0000-14-016-H01-P	3 (0.3)	Knowledge	0751 - Institute for Natural Resources (INR)
Understanding Heart Failure: A Guide to Applying the PSW Pocketbook Toolkit to Clinical Practice	0175-0000-15-049-H01-P	1 (0.1)	Knowledge	0175 - Pharmacy Society of Wisconsin
Update on Pharmacological Treatment of Deep Vein Thrombosis	0513-0000-13-146-H01-P	1 (0.1)	Knowledge	0513 - OnCourse Learning
Updates in Anticoagulation Reversal and New agents	0173-0000-15-009-L04-P	1 (0.1)	Knowledge	0173 - Idaho Society of Health-System Pharmacists
Updates in Hypertension	0096-0000-15-036-H01-P	1.25 (0.125)	Knowledge	0096 - Texas Tech University Health Sciences Center School of Pharmacy
Updates in the Management of Chronic Heart Failure	0430-0000-15-021-H01-P	2 (0.2)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Updates in the Management of Stable Chronic Obstructive Pulmonary Disease	0106-0000-13-012-H01-P	1.5 (0.15)	Knowledge	0106 - Connecticut Pharmacists Association
Updates Plus in Ambulatory Care Pharmacy Webinar	0217-0000-16-078-L01-P	2 (0.2)	Application	0217 - American College of Clinical Pharmacy
Updates Plus in Pharmacotherapy Webinar	0217-0000-16-077-L01-P	2 (0.2)	Application	0217 - American College of Clinical Pharmacy
Utilizing Patient-Centered Approaches in PAH: The Expanding Role of Pharmacists	0473-9999-16-001-H01-P	1.5 (0.15)	Knowledge	0473 - Center for Independent Healthcare Education
Vegetarian Nutrition	0826-9999-14-026-H01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Vegetarian Nutrition	0826-9999-14-026-L01-P	1 (0.1)	Knowledge	0826 - MED2000, Inc.
Venous Thromboembolism Prevention in Nonsurgical Patients: A Review of the 2012 CHEST Guidelines	0204-9999-14-401-H01-P	1 (0.1)	Knowledge	0204 - American Society of Health-System Pharmacists

Venous Thromboembolism: A Review of Prevention and Treatment Options	0100-0000-16-004-H04-P	2 (0.2)	Knowledge	0100 - Arizona Pharmacy Association
Vitamin D: Vitamin or Hormone?	0826-9999-15-022-L01-P	2 (0.2)	Knowledge	0826 - MED2000, Inc.
Warfarin Associated Coagulopathy: Reversal Options and Practical Considerations for the Pharmacist	0430-0000-14-054-H01-P	2 (0.2)	Knowledge	0430 - Postgraduate Healthcare Education, LLC
Weight Loss/Weight Management Bootcamp	0826-9999-16-002-H01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc.
Weight Loss/Weight Management Bootcamp	0826-9999-16-002-L01-P	6 (0.6)	Knowledge	0826 - MED2000, Inc
What is the Role for Steroids in Newborns with Cardiovascular Insufficiency?	0263-0000-15-539-H01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
What is the Role for Steroids in Newborns with Cardiovascular Insufficiency?	0263-0000-15-539-L01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
What is the Role for Steroids in Newborns with Cardiovascular Insufficiency?	0263-0000-15-539-L01-P	0.75 (0.075)	Knowledge	0263 - Contemporary Forums
What's New in COPD	0002-0000-14-009-L01-P	1 (0.1)	Knowledge	0002 - Samford University McWhorter School of Pharmacy
What's New In The Management of Heart Failure?	0022-0000-15-019-H01-P	1 (0.1)	Knowledge	0022 - University of Kentucky College of Pharmacy
Women and Heart Disease: Paradigms for Prevention	0845-0000-15-002-L04-P	1 (0.1)	Knowledge	0845 - University of North Texas Health Science Center
Womens Health Conference	0277-0000-13-202-L01-P	5.25 (0.525)	Knowledge	0277 - University of California Davis Health System Department of Pharmacy
Women's Health Conference	0277-0000-13-203-L01-P	5 (0.5)	Knowledge	0277 - University of California Davis Health System Department of Pharmacy

Total Hours: 909.45

Appendix G-6

ACPE PLAN Programming Home Study Application Activity

Title	UAN	Hrs (CEUs)	Activity Type	Provider Description
10 Years of Waiting: Find Out About the Latest Updates in Hypertension and Lipid Guidelines	0204-0000-13-307-H01-P	2 (0.2)	Application	0204 - American Society of Health-System Pharmacists
2013 APhA/ASHP Ambulatory Care Specialty Recertification Program: Literature Study Module 2	0204-9999-13-949-H01-P	8 (0.8)	Application	0204 - American Society of Health-System Pharmacists
2013 ASHP Pharmacotherapy Recertification Literature Study, Module 2A	0204-0000-13-907-H01-P	5 (0.5)	Application	0204 - American Society of Health-System Pharmacists
2013 From Theory to Practice: Clinical Reasoning Series in Ambulatory Care Pharmacy ♦ Evidence-Based Screening and Prevention Strategies	0217-0000-13-109-H01-P	6 (0.6)	Application	0217 - American College of Clinical Pharmacy
2013 Pharmacotherapy Specialty Examination Review Course: Complex Heart Failure Case	0204-0000-13-950-H01-P	1.5 (0.15)	Application	0204 - American Society of Health-System Pharmacists
2013 Pharmacotherapy Specialty Examination Review Course: Complex HIV Case	0204-0000-13-954-H02-P	1.5 (0.15)	Application	0204 - American Society of Health-System Pharmacists
2013 Pharmacotherapy Specialty Examination Review Course: Complex Ischemic Heart Disease Case	0204-0000-13-953-H01-P	1.5 (0.15)	Application	0204 - American Society of Health-System Pharmacist

2013 Pharmacotherapy Specialty Examination Review Course: Complex Metabolic Syndrome Case	0204-0000-13-952-H01-P	1.5 (0.15)	Application	0204 - American Society of Health-System Pharmacists
2013 Pharmacotherapy Specialty Examination Review Course: Complex Pneumonia Case	0204-0000-13-958-H01-P	1.5 (0.15)	Application	0204 - American Society of Health-System Pharmacists
2014 Updates to the Updates in Pharmacotherapy Webinar	0217-0000-14-051-H01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
Advances in Anticoagulation	0154-0000-15-042-H01-P	1.5 (0.15)	Application	0154 - Texas Pharmacy Association
Advances in the Management of Dyslipidemia: Making Sense of Conflicting Treatment Recommendations	0202-0000-15-080-H01-P	2 (0.2)	Application	0202 - American Pharmacists Association
Ambulatory Care Pharmacy Preparatory Review and Recertification Course—Cardiology I and Cardiology II	0217-0000-15-026-H01-P	3 (0.3)	Application	0217 - American College of Clinical Pharmacy
Ambulatory Care Pharmacy Preparatory Review and Recertification Course—Pulmonary Disorders, Gastrointestinal Disorders, and Obstetrics and Gynecology	0217-0000-15-025-H01-P	4 (0.4)	Application	0217 - American College of Clinical Pharmacy
Anticoagulant and Antiplatelet Agents in Special Patient Populations: Does One Size Fit All?	0204-0000-13-368-H01-P	2 (0.2)	Application	0204 - American Society of Health-System Pharmacists

Anticoagulation Certificate Program	0100-0000-13-086-H01-P	22 (2.2)	Application	0100 - Arizona Pharmacy Association
Anticoagulation Certificate Program	0100-9999-13-086-H01-P	22 (2.2)	Application	0100 - Arizona Pharmacy Association
Anticoagulation self-study Certificate Program	0100-0000-13-053-H01-P	14 (1.4)	Application	0100 - Arizona Pharmacy Association
Anticoagulation self-study Certificate Program	0100-0000-13-071-H01-P	14 (1.4)	Application	0100 - Arizona Pharmacy Association
Anticoagulation self-study Certificate Program	0100-9999-13-071-H01-P	14 (1.4)	Application	0100 - Arizona Pharmacy Association
Anticoagulation Therapy for Stroke Prevention in Atrial Fibrillation: Current and Emerging Options (2241.41)	0052-0000-15-015-H01-P	2 (0.2)	Application	0052 - Projects In Knowledge, Inc.
Anticoagulation Therapy for Stroke Prevention in Atrial Fibrillation: Current and Emerging Options (2241.41)	0052-0000-15-015-H01-P	2 (0.2)	Application	0052 - Projects In Knowledge, Inc.
Anticoagulation Therapy for Stroke Prevention in Atrial Fibrillation: Current and Emerging Options (2241.41)	0052-0000-15-015-H01-P	2 (0.2)	Application	0052 - Projects In Knowledge, Inc.
Antiplatelet Agents in Acute Coronary Syndrome: How to Improve Outcomes and Reduce ACS Readmissions – Case Study	0290-0000-15-166-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Antiplatelet Agents in Acute Coronary Syndrome: Interventions for Hospital and Community Pharmacists	0290-0000-15-144-H01-P	2 (0.2)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Are You Ready for CMS Readmission Penalties for COPD?	0202-0000-15-022-H01-P	2 (0.2)	Application	0202 - American Pharmacists Association
ASHP Pharmacotherapy Recertification Literature Study 2015, Module 1A: Cardiology & Statistics (nested case-control study)	0204-0000-15-914-H01-P	5 (0.5)	Application	0204 - American Society of Health-System Pharmacists

ASHP Pharmacotherapy Recertification Literature Study 2015, Module 1B: Cardiology & Statistics (meta analysis)	0204-0000-15-915-H01-P	5 (0.5)	Application	0204 - American Society of Health-System Pharmacists
ASHP Pharmacotherapy Recertification Literature Study 2015, Module 1D: Pulmonary (COPD & Asthma)	0204-0000-15-917-H01-P	4 (0.4)	Application	0204 - American Society of Health-System Pharmacists
ASHP/APhA Ambulatory Care Recertification Literature Study 2014, Module 1B: Pulmonary	0204-9999-14-908-H01-P	5 (0.5)	Application	0204 - American Society of Health-System Pharmacists
Asthma and allergic asthma: personalizing treatment to the patient and therapeutic updates	0574-0000-15-006-H01-P	1 (0.1)	Application	0574 - ScientiaCME, LLC
Bio-Identical Hormone Replacement Therapy - What's Most Effective?	0201-9999-14-014-H01-P	1 (0.1)	Application	0201 - American College of Apothecaries, Inc.
Bleeding Disorders: Achieving Optimal Therapeutic Outcomes in the Acute-care Setting	0204-0000-13-472-H01-P	1 (0.1)	Application	0204 - American Society of Health-System Pharmacists
Blood Pressure Control: Pharmacist-delivered Medication Management Strategies	0025-0000-15-173-H01-P	2.25 (0.225)	Application	0025 - University of Maryland School of Pharmacy
Breathe Easier: Streamlining the Management of COPD with Optimal Collaborative Care Strategies	0290-9999-15-101-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Case Studies in Respiratory Disease Management - Part 2	0009-9999-16-011-H01-P	1 (0.1)	Application	0009 - University of Connecticut School of Pharmacy
Clinical Case Scenarios: Recognition and Treatment of Rare Bleeding Disorders in Emergent Situations	0204-0000-13-473-H01-P	1 (0.1)	Application	0204 - American Society of Health-System Pharmacists

Clinical Updates: Major Bleeding with Oral Anticoagulant Therapy	0204-0000-13-341-H01-P	2 (0.2)	Application	0204 - American Society of Health-System Pharmacists
Complex Case: Anticoagulation	0202-9999-15-132-H04-P	2 (0.2)	Application	0202 - American Pharmacists Association
Complex Case: Cardiovascular Disease 1	0202-9999-15-139-H04-P	1.5 (0.15)	Application	0202 - American Pharmacists Association
Complex Case: Cardiovascular Disease 2	0202-9999-15-140-H04-P	2 (0.2)	Application	0202 - American Pharmacists Association
Complex Case: Pulmonary	0202-9999-15-137-H04-P	1 (0.1)	Application	0202 - American Pharmacists Association
Congestive Heart Failure	0204-0000-15-448-H01-P	2 (0.2)	Application	0204 - American Society of Health-System Pharmacists
COPD: Monthly Case Conference 1: COPD Exacerbation	0009-9999-13-039-H01-P	1 (0.1)	Application	0009 - University of Connecticut School of Pharmacy
COPD: Monthly Case Conference 2: Patient Case Transitions	0009-9999-13-040-H01-P	1 (0.1)	Application	0009 - University of Connecticut School of Pharmacy
COPD: Monthly Case Conference 3: COPD Case Studies	0009-9999-13-041-H01-P	1 (0.1)	Application	0009 - University of Connecticut School of Pharmacy
Critical Care Pharmacy Preparatory Review Course—Pain, Agitation, Delirium, and Neuromuscular Blockade in the Intensive Care Unit, Neurocritical Care, and Pulmonary Disorders	0217-0000-15-033-H01-P	4.5 (0.45)	Application	0217 - American College of Clinical Pharmacy
Critical Care Pharmacy Preparatory Review Course—Supportive and Preventive Medicine, Shock Syndromes, Cardiovascular Critical Care, and Acute Cardiac Care	0217-0000-15-031-H01-P	4.5 (0.45)	Application	0217 - American College of Clinical Pharmacy

Current and Emerging Options for Long-Term Prevention and Treatment of VTE (2241.42)	0052-9999-15-016-H01-P	2 (0.2)	Application	0052 - Projects In Knowledge, Inc.
Devices Made Easy: Devices Made Easy: The Role of the Pharmacist in Optimizing Patient Adherence in COPD—Case 1	0290-0000-15-124-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Devices Made Easy: The Role of the Pharmacist in Optimizing Inhaler Use in COPD – Patient Case Study 2	0290-0000-15-125-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Dissecting Venous Thromboembolism: A Focus on New Oral Anticoagulants and Successful Pharmacy-Based Prevention Strategies	0290-0000-15-138-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Emerging Therapies and Expanding Role of Pharmacists in the Care of Patients with Heart Failure: A Webinar Activity	0290-0000-15-045-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Emerging Therapies and the Care of Patients With Heart Failure: A Recently Discharged Patient	0290-0000-15-091-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Emerging Therapies and the Expanding Role of Pharmacists in the Care of Patients with Heart Failure	0290-0000-15-072-H01-P	2 (0.2)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Emerging Therapies and the Expanding Role of Pharmacists in the Care of Patients with Heart Failure: Transition of Care issues	0290-0000-15-110-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education

Endocarditis	0008-0000-13-095-H01-P	2 (0.2)	Application	0008 - University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
JNC 8: Worth the wait or too little too late?	0401-0000-14-054-H01-P	1 (0.1)	Application	0401 - Drug Store News
Managing Patients Receiving Novel Oral Anticoagulants	0202-0000-15-178-H01-P	1.5 (0.15)	Application	0202 - American Pharmacists Association
Molecular Profiling and Targeted Therapy in Non-Small Cell Lung Cancer: Clinical and Economic Implications of Optimizing Individualized Patient Management	0290-0000-15-095-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
New JNC8 Hypertension Guidelines, a Definitive Answer?	0154-0000-13-108-H01-P	1 (0.1)	Application	0154 - Texas Pharmacy Association
Novel Oral Anticoagulants: What is the role of the Pharmacist?	0022-0000-15-012-H01-P	1 (0.1)	Application	0022 - University of Kentucky College of Pharmacy
NSAID Use - Pain Management in the Elderly	0781-0000-13-003-H01-P	1 (0.1)	Application	0781 - Institute for Continuing Healthcare Education
Optimizing Pharmacotherapy for Secondary Prevention of Acute Coronary Syndromes	0202-0000-13-235-H04-P	1 (0.1)	Application	0202 - American Pharmacists Association
Out with the Old, In with the New: 2013 ACC/AHA Blood Cholesterol Guidelines	0026-0000-14-008-H01-P	1 (0.1)	Application	0026 - MCPHS University
Out With The Old, In With The New: Updates in Guidelines for HTN and Lipids	0154-0000-15-044-H01-P	1 (0.1)	Application	0154 - Texas Pharmacy Association
Pediatric Pharmacy Preparatory Review Course—PICU I, PICU II and Cardiology	0217-0000-15-037-H01-P	4 (0.4)	Application	0217 - American College of Clinical Pharmacy
Pediatric Pharmacy Preparatory Review Course—Pulmonary, Pediatric Transplant and Neonatology	0217-0000-15-038-H01-P	3.5 (0.35)	Application	0217 - American College of Clinical Pharmacy
Pick Your Poison -- Current Trends in Toxicology	0100-0000-15-085-H04-P	12 (1.2)	Application	0100 - Arizona Pharmacy Association

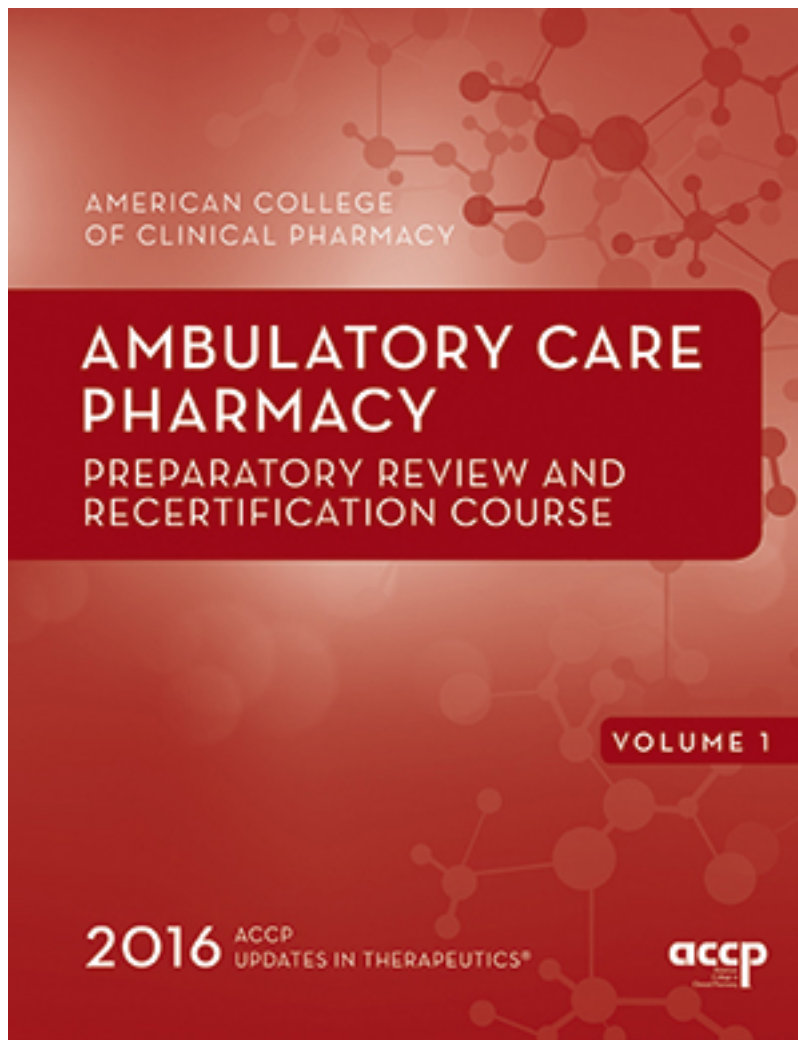
PSAP 2016 Book 1 (Cardiology I)	0217-0000-16-001-H01-P	7.5 (0.75)	Application	0217 - American College of Clinical Pharmacy
PSAP 2016 Book 1 (Cardiology II)	0217-0000-16-002-H01-P	6 (0.6)	Application	0217 - American College of Clinical Pharmacy
Secondary Prevention of VTE: Focus on the Role of New Oral Anticoagulants in Facilitating Effective Transitions of Care	0290-0000-15-140-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Stop the Clot: What Every Healthcare Professional Should Know	0387-9999-15-100-H01-P	2.5 (0.25)	Application	0387 - Centers for Disease Control and Prevention
Stopping Medications in Older Adults: Why, When, and How	0204-0000-13-360-H01-P	2 (0.2)	Application	0204 - American Society of Health- System Pharmacists
Taking Control: The Role of Allied Healthcare Providers in Empowering Patient Management of Asthma	0290-9999-15-100-H01-P	1 (0.1)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
The Impact of New Oral Anticoagulants (NOAC): Review of Safety, Efficacy, and Cost-effectiveness in the Managed Care Environment	0290-9999-15-128-H01-P	1.5 (0.15)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Therapeutic Decision Making for Patients with ACS	0202-0000-13-234-H04-P	1 (0.1)	Application	0202 - American Pharmacists Association
Transitions of Care for Patients with Acute Coronary Syndromes: The Role of Health System and Community Pharmacists in Adherence to Antiplatelet Therapy – Patient Case Study 1	0290-0000-14-084-H01-P	1.5 (0.15)	Application	0290 - Pharmacy Times Office of Continuing Professional Education

Transitions of Care for Patients with Acute Coronary Syndromes: The Role of Health System and Community Pharmacists in Adherence to Antiplatelet Therapy – Patient Case Study 2	0290-0000-14-085-H01-P	1.5 (0.15)	Application	0290 - Pharmacy Times Office of Continuing Professional Education
Updates Plus in Ambulatory Care Pharmacy Webinar	0217-0000-16-078-H01-P	2 (0.2)	Application	0217 - American College of Clinical Pharmacy
X Marks the Clot: New Oral Anticoagulants for the Treatment and Secondary Prevention of VTE	0204-0000-13-292-H01-P	2 (0.2)	Application	0204 - American Society of Health-System Pharmacists

Total Hours: 262.25

Appendix G-7

Sample Educational Program Materials



Program Overview

Updates in Therapeutics®: Ambulatory Care Pharmacy Preparatory Review and Recertification Course is ideal for pharmacy professionals who are preparing for the Ambulatory Care Pharmacy Specialty Certification Examination administered by the Board of Pharmacy Specialties (BPS) and for those seeking a self-paced review and refresher of disease states and therapeutics.

Developed by Board Certified Ambulatory Care Pharmacists and Board Certified Pharmacotherapy Specialists the course content provides a comprehensive review of the knowledge domains covered in the ambulatory care pharmacy specialty certification examination. The course uses a case-based approach, with strong emphasis on the thought processes needed to solve patient care problems in each therapeutic area.

This is the same course that was presented live at ACCP Updates in Therapeutics® 2016. The course materials are available in a variety of formats to best suit your learning style. The online course, and online course and print workbook are available for continuing pharmacy education credit.

To receive all course components, select the online course with continuing pharmacy education credit, or the online course and print workbook for continuing education. Instructional components also are priced for individual sale.

Course Expiration: October 31, 2017

Course Content

The *The Updates in Therapeutics®: Ambulatory Care Pharmacy Preparatory Review and Recertification Course* workbook covers the following content:

Volume 1

Processes of Care/Organization
Agreements/Special Issues in Pharmacy Practice
Communication Strategies in Pharmacy
Developing a Clinical Practice
Managing a Clinical Practice
Biostatistics: A Refresher
Study Designs: Fundamentals of Interpretation
Genitourinary, Electrolytes, and Nutritional Deficiencies/Supplementation in Older Adults
Psychiatric Disorders
Neurology
Gastrointestinal Disorders
Diabetes Mellitus
Endocrine Disorders
Pulmonary Disorders

Volume 2

Cardiology I
Cardiology II
Obstetrics and Gynecology
Infectious Diseases I
Infectious Diseases II
Nephrology
Bone/Joint and Rheumatology
Health Maintenance and Public Health

Additional Resources:

Dermatologic/HEENT & Immunologic Disorders
Oncology Supportive Care
Drug Information, Evidence-Based Medicine, Research, and HIPPA
Policy, Practice and Regulatory Issues
The Board of Pharmacy Specialties "2016 Recertification Guide"

TABLE OF CONTENTS

**PROCESS OF CARE/ORGANIZATIONAL AGREEMENTS/SPECIAL ISSUES
IN PRACTICE MANAGEMENT 1-3**
*Pharmacist Scope of Practice; Clinical Pharmacy Practice Models; Medication Therapy Management;
Comprehensive Medication Management; Collaborative Drug Therapy Management; Credentialing and Privileging;
Transitions of Care; Immunizations; Wellness Visits, Federal Drug Administration and Other Medication Safety
Organizations; Medication Safety; Medication Reconciliation; Transitions of Care; Pharmacy and Therapeutics
Committees; Formulary Management; Medicare Part D; Patient Assistance; Regulatory Requirements for Point-
of-Care Testing*

COMMUNICATION STRATEGIES IN PHARMACY 1-79
*Communicating Verbally with Patients and Caregivers; Selecting Written Patient Education Materials;
Alternative Methods of Communicating with Patients; Communicating with Other Health Care Professionals;
Documenting in the Medical Record; Opportunities for Patient Advocacy Outside the Health Care System*

DEVELOPING A PRACTICE 1-125
*Identifying the Need for Ambulatory Care Services; Preparing Service Proposals; Marketing Services;
Creating a Service Model*

MANAGING A PRACTICE 1-169
*Ongoing Management; Maintaining Lines of Communication; Documentation; Measuring Program Quality;
Reimbursement for Pharmacy Services in Ambulatory Care; Billing*

BIOSTATISTICS: A REFRESHER 1-215
*Discrete and Continuous Variables; Descriptive and Inferential Statistics; Discrete and Normal Distribution;
Confidence Intervals; Hypothesis Testing; Parametric Tests; Analysis of Variance; Nonparametric Tests; Nominal
Data; Correlation; Regression; Decision Errors; Survival Analysis*

STUDY DESIGNS: FUNDAMENTALS OF DESIGN AND INTERPRETATION . . . 1-239
*Validity; Bias; Case Reports; Observational Study Designs; Incidence; Prevalence; Relative Risks, Odds Ratios;
Randomized and Controlled Trial Design; Analysis; Systematic Review; Meta-analysis; Summary Measures of
Effect; Pharmacoeconomic Studies; Sensitivity; Specificity; Predictive Values*

**GENITOURINARY, ELECTROLYTES, AND NUTRITIONAL DEFICIENCIES/
SUPPLEMENTATION IN OLDER ADULTS 1-267**
*Benign Prostatic Hyperplasia; Urinary Incontinence; Erectile Dysfunction; Electrolyte Abnormalities; Nutritional
Deficiencies and Nutritional Supplementation*

PSYCHIATRIC DISORDERS 1-315

Anxiety Disorders; Sleep Disorders; Major Depression; Monoamine Oxidase Inhibitors; Bipolar Disorder; Schizophrenia; Adverse Effect Management; Attention-Deficit/Hyperactivity Disorder; Treatment Guidelines

NEUROLOGY 1-403

Epilepsy Epidemiology; Known Causes of Seizures; Pathophysiology; Epilepsy Prognosis and Treatment; Patient Education and Special Populations; Types of Headache; Cluster Headache; Tension Headache; Migraine, Pain; Spinal Cord Injuries; Neuromuscular Disease, Parkinson Disease; Dementia; Traumatic Brain Injuries; Tremors; Etiology and Risk Factors; Clinical Presentation and Evaluation; Diagnosis; Clinical Management; Medication Reconciliation; Transitions of Care

GASTROINTESTINAL DISORDERS 1-523

Gastroesophageal Reflux Disease; Peptic Ulcer Disease; Complications of Chronic Liver Disease; Viral Hepatitis; Malabsorption Syndrome; Diarrhea; Constipation; Nausea and Vomiting; Irritable Bowel Syndrome; Inflammatory Bowel Disease

DIABETES MELLITUS 1-641

Classification; Diagnosis; Screening; Prediabetes; Diabetes Pathophysiology; Treatment; Point-of-Care Testing; New-Drug Treatment Requirements; Prevention and Management of Diabetes Complications; Diabetes Credentialing

ENDOCRINE DISORDERS 1-679

Obesity; Thyroid Disease; Polycystic Ovary Syndrome; Pituitary Disease; Adrenal Disease; Male Hypogonadism

PULMONARY DISORDERS AND SMOKING CESSATION 1-741

Asthma; Chronic Obstructive Pulmonary Disease; Smoking Cessation; Public Health Issues; Practice Management Issues; Patient Advocacy

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CARDIOLOGY I 2-3

Venous Thromboembolism; Arrhythmias; Valvular Heart Disease; Pulmonary Primary Hypertension

CARDIOLOGY II 2-115

Cardiovascular Disease; Coronary Heart Disease; Primary Prevention of Coronary Heart Disease Events; Secondary Prevention of MI; Hypertension; Dyslipidemia; Peripheral Arterial Disease

OBSTETRICS AND GYNECOLOGY 2-195

Contraception; Infertility; Pregnancy and Lactation; Menstrual Disorders; Endometriosis; Menopausal Symptoms; Women's Health Resources

INFECTIOUS DISEASES I 2-251

Sexually Transmitted Diseases; Human Immunodeficiency Virus; Non-HIV Viral Infections; Fungal Infections

INFECTIOUS DISEASES II 2-321

Urinary Tract Infections; Community-Acquired Pneumonia; Tuberculosis; Upper Respiratory Tract Infections; Conjunctivitis/Ophthalmic Infections; Uncomplicated Skin and Soft Tissue Infections; Tickborne Infections/Lyme Disease; Infective Endocarditis; Infectious Diarrhea/Gastrointestinal Infections; Clostridium difficile; Central Nervous System Infections; Bone and Joint Infections; Antimicrobial Stewardship

NEPHROLOGY 2-379

Kidney Function; Classification of Kidney Failure; Diabetes Treatment in Chronic Kidney Disease; Hypertension Treatment in CKD; Nutritional Considerations; Anemia Management; Metabolic Bone Disease; Pharmacokinetic Changes in Kidney Disease; RRT; Kidney Stones

BONE/JOINT AND RHEUMATOLOGY 2-415

Osteoporosis; Rheumatoid Arthritis; Psoriatic Arthritis; Osteoarthritis; Fibromyalgia Syndrome; Systemic Lupus Erythematosus; Gout and Hyperuricemia

HEALTH MAINTENANCE AND PUBLIC HEALTH 2-497

First Aid; Cardiopulmonary Resuscitation; Toxicology; Bioterrorism/Natural Disasters, Immunizations; Adherence; Complementary and Alternative Medicine

ADDITIONAL RESOURCES

DERMATOLOGY/HEENT & IMMUNOLOGIC DISORDERS 2-569

Macular Degeneration; Glaucoma; Dry Eyes; Vertigo; Allergic Rhinitis; Psoriasis; Urticaria; Angioedema; Acne; Psoriasis; Infestations; Minor Burns; Decubitus Ulcers

ONCOLOGY SUPPORTIVE CARE 2-645

Antiemetics; Pain Management; Treatment of Febrile Neutropenia; Use of CSFs in Neutropenia and Febrile Neutropenia; Thrombocytopenia; Anemia and Fatigue; Chemoprotectants; Oncology Emergencies; Miscellaneous Antineoplastic Pharmacotherapy

DRUG INFORMATION, EVIDENCE-BASED MEDICINE, RESEARCH AND HIPAA 2-687

Primary, Secondary, and Tertiary Literature; Search Engines, Evaluating Information on the Internet; Evidence-Based Pharmacy/Medicine; Evaluating Clinical Guidelines; Institutional Review Board/Human Subjects Research; HIPAA (Health Insurance Portability and Accountability Act of 1996); Professional Writing: The Publication Process

POLICY, PRACTICE, AND REGULATORY ISSUES 2-705

HIPAA, IRB, Informed Consent; Prescription Drug Approval Process; Investigational Drug Service; JCAHO, ORYX, NCQA, and HEDIS

THE BOARD OF PHARMACY SPECIALTIES “2016 RECERTIFICATION GUIDE” 2-739

Printed courtesy of the Board of Pharmacy Specialties (BPS)

PROGRAM GOALS AND TARGET AUDIENCE

Updates in Therapeutics®: Ambulatory Care Pharmacy Preparatory Review and Recertification Course is designed to help pharmacists who are preparing for the Board of Pharmacy Specialties certification examination in Ambulatory Care Pharmacy as well as those seeking a general review and refresher on disease states and therapeutics. The program goals are as follows:

1. To present a high-quality, up-to-date overview of disease states and therapeutics;
2. To provide a framework to help attendees prepare for the specialty certification examination in ambulatory care pharmacy; and
3. To offer participants an effective learning experience using a case-based approach with a strong focus on the thought processes needed to solve patient care problems in each therapeutic area.

APhA Pharmacy-Based Cardiovascular Disease Risk Management

Pharmacy-Based Cardiovascular Disease Risk Management is an innovative and interactive certificate training program that explores the pharmacist's role in cardiovascular disease risk management. This practice-based activity is the first step for pharmacists interested in learning the essential skills to successfully assess risk, promote cardiovascular disease prevention, and encourage patient adherence to therapy.

The goals of the certificate training program are to:

- Educate pharmacists on current evidence-based treatment goals and clinical management recommendations for dyslipidemia and hypertension.
- Familiarize pharmacists with important concepts related to healthful lifestyle changes that focus on cardiovascular disease prevention.
- Introduce techniques and skills for encouraging patient adherence to prescribed therapies.
- Ensure pharmacist proficiency in blood pressure measurement technique and point-of-care lipid testing.
- Enhance pharmacist experience in applying elements of motivational interviewing with respect to medication adherence and lifestyle modifications.

This ACPE activity does not provide a [certification](#) in this topic but rather advanced professional training.

Certificate Training Program Components

The activity is conducted in two parts: a web-based self-study and a live training seminar.

The self-study modules will focus on these core areas:

- Module 1. Cardiovascular Disease Risk Assessment — Assessment of factors that put patients at an increased risk for cardiovascular disease.
- Module 2. Managing Dyslipidemia — Review of pathophysiology, explanation of the recommended approach to treatment, and extensive discussion of pharmacologic options for the management of dyslipidemia.
- Module 3. Managing Hypertension — Review of pathophysiology, explanation of the recommended approach to treatment, and extensive discussion of pharmacologic options for the management of hypertension.
- Module 4. Lifestyle Modifications and Risk Factor Management — Discussion of recommended dietary interventions, physical activity, weight reduction, and smoking cessation.
- Module 5. The Pharmacist's Role in Cardiovascular Disease Prevention and Management — Explanation of ongoing patient monitoring techniques and communication with prescribers to optimize patient self-management (including adherence and behavior change counseling).

The live seminar will focus on these core areas:

- A case-based approach to cardiovascular disease risk assessment and treatment decisions, managing special situations, treating hypertension in a patient with diabetes, and lifestyle modifications and motivational interviewing.
- Skills assessments on blood pressure measurement technique and motivational interviewing. Participants will be conducting blood pressure assessments on other participants.

- A discussion regarding the role of the pharmacist and existing business models for cardiovascular disease risk management services.

Activity Completion Requirements

A Certificate of Achievement is awarded to participants who successfully complete all activity requirements, which include a pre-test, the self-study activity, the self-study assessment, the live training seminar, and the final assessment. Successful completion is defined as completing the pre-test, a self-study assessment score of 70% or higher, attendance at the live seminar, a final assessment score of 70%, and completing the activity evaluation.

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Speciality in Cardiology Pharmacy Practice
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