



CRITICAL CARE TRAINEESHIP

Application Policies and Guidelines

This program is supported by an educational grant from Scios, Inc.



The American Society of Health-System Pharmacists is accredited by the American Council for Pharmacy Education (ACPE) as a provider of continuing education.

Universal Program Number (Self-Study): 204-000-08-035-H01P (15 hours)

Universal Program Number (Experiential): 204-000-08-034-L01P (70 Hours)



The ASHP Critical Care Traineeship is an ACPE Certificate Program that provides CE credit for both the self-study and the experiential components. Participants must successfully complete the online self-study component test before they can participate in the experiential component in order to earn full credit for this Certificate Program.

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The Critical Care Traineeship was designed for pharmacists in acute settings who are providing specialized services for critically ill patients. The traineeship prepares participants to design patient-specific pharmacotherapy, solve drug therapy problems, and develop protocols, policies, and procedures for the treatment of such patients.

The curriculum, consisting of a self-study program and a 10-day experiential program, provides intensive didactic and clinical training for selected pharmacists. The self-study program offers 15 continuing education hours (1.5 CEUs) via the modules provided by the ASHP Research and Education Foundation. Completion of the self-study program is a requirement for attending the experiential program. The experiential program offers 70 continuing education hours (7.0 CEUs) and allows participants to observe and participate in the pharmaceutical care of patients at a health system with an established critical care service. A certificate will be given to participants who successfully complete all parts of the program.

Educational Goals

Self-Study Program

After being selected to participate in the traineeship (see the Selection Criteria for an explanation of the selection process), participants will receive a copy of the ASHP Foundation's Critical Care Traineeship Self-Study Program, which will help trainees develop the problem-solving skills required for clinical practice in this area.

Participants will already have a solid foundation in the following areas as they relate to the care of critically ill patients:

- Pathophysiology
- Clinical pharmacology and therapeutics
- Clinical laboratory data interpretation
- Clinical pharmacokinetics
- Medical terminology and abbreviations

The purpose of the self-study element of this traineeship is to prepare the trainee to come to the experiential stage with the sound background knowledge required in the specialized areas necessary to become an effective member of a team managing critically ill patients.

The self-study program therefore concentrates on acquiring knowledge about the disease states most likely to be encountered, and the medications used in their management in order to be able to design, recommend, monitor and evaluate patient-specific therapeutic regimens that incorporate the principles of evidence-based medicine (the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual critically ill patients), as well as to build the information base needed to design a medication therapy regimen for a critically ill patient by collecting, organizing and generating patient-specific problem lists using all information needed by the critical care pharmacist to prevent, detect, and resolve medication-related problems and to make appropriate medication therapy recommendations.

Specifically, this will require the ability to:

- Explain signs and symptoms, epidemiology, risk factors, pathogenesis, natural history of disease, pathophysiology, clinical course, etiology and treatment of diseases commonly encountered in the critical care environment.

- Explain the meaning of results of diagnostic and laboratory tests, physiologic monitoring and physical assessment commonly performed in the critical care setting.
- Explain the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacoeconomics, usual regimen (dose, schedule, route, and method of administration), indications, contraindications, interactions, adverse reactions and therapeutics of medications and specialized nutrition support used in the critical care environment.
- Redesign therapeutic regimens and corresponding monitoring plans based on evaluation of monitoring data and current therapy.

In order to redesign therapeutic regimens and monitoring plans, the trainee should to be able to accurately assess the patient's progress toward the therapeutic goals and be able to:

- Accurately interpret the meaning of each test parameter measurement.
- Explain factors that may contribute to the unreliability of monitoring results (e.g., patient-specific factors, timing of monitoring tests, equipment errors and outpatient versus inpatient monitoring.)
- Explain the need to consider multiple organ system function when interpreting a group of individual test parameter measurements.
- Explain the importance of the analysis of trends over time in monitoring test parameter measurements.

Examples of disease states and subject areas covered in the self-study are:

- Atrial fibrillation
- Congestive heart failure
- Shock
 - Fluid resuscitation
 - Hemodynamic monitoring
 - Vasopressors
- Adult respiratory distress syndrome (ARDS)/Acute Lung Injury (ALI)
- Pulmonary embolism (PE)/Deep vein thrombosis (DVT)
- Hypertensive emergencies
- Acute renal failure
- Acid/Base - fluid and electrolyte disorders
- Status epilepticus
- Critical illness neuropathy
- Stress ulcer prophylaxis
- Acute upper GI bleeding - varices
- Pancreatitis
- Liver failure
 - Ascites
 - Encephalopathy
- Spontaneous bacterial peritonitis (SBP)
- Adrenal insufficiency
- Diabetic ketoacidosis (DKA)
- ICU anemia
- Coagulopathy
 - Heparin-induced thrombocytopenia (HIT)
 - Disseminated intravascular coagulopathy (DIC)
- ICU-related thrombocytopenia

- Infectious diseases
 - Meningitis
 - Intra-abdominal
 - Pneumonia
 - Sepsis
 - Device-related
 - Resistance
- Withdrawal
- Agitation/anxiety
- Pain
- Delirium
- Paralyzation
- Sedation
- Laboratory interpretation

The self-study program includes study questions and a continuing education test. In order to advance to the experiential program and obtain CE credits, participants must pass the test with a score of 70%.

Experiential Program

During the 10-day experiential program, participants observe experienced clinicians and design, monitor and evaluate patient-specific pharmacotherapy for critically ill patients. The program focuses on critical thinking, decision-making and communication skills. At the completion of the experiential program, participants should be able to:

- Use an organized system for staying current with critical care literature.
- Communicate clearly when speaking or writing.
- Function effectively as a member of a critical care team.
- Solve practice problems effectively.
- Display a caring attitude toward critically ill patients in all aspects of job responsibilities.
- Deliver effective education and training programs, which may include in-services to health care providers or patients.

Patient Care Skills

- Establish a collaborative working relationship with physicians and other health care providers on the critical care team.
- Design, recommend, monitor and evaluate patient-specific therapeutic regimens that incorporate the principles of evidence-based medicine (the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients). When provided as part of the practice of direct patient care, this goal always involves a series of integrated, interrelated steps. To facilitate teaching and assessment, the eight steps relevant to critically ill patients are detailed below as separate, but related sub-goal areas.
 - Build the information base needed to design a medication therapy regimen for a critically ill patient.
 - Design therapeutic regimens that incorporate the principles of evidence-based medicine, patient-specific data and ethics.
 - Design monitoring plans for therapeutic regimens.
 - Recommend or communicate therapeutic regimens and corresponding monitoring plans.
 - Implement the therapeutic regimen and/or corresponding monitoring plan for critically ill patients.
 - Redesign therapeutic regimens and corresponding monitoring plans based on evaluation

- of monitoring data giving consideration to secondary treatment options.
- Collect and evaluate outcome data on patients.
- Use processes that help to ensure continuity of direct patient care across health care delivery settings.
- Understand the components of disease management: identification of need for and development, implementation and assessment of treatment guidelines/protocols related to individual and population-based patient care with the potential for incorporating into the department/institution's overall continuous quality improvement plan.
- Understand approaches to designing a process to prevent adverse medication events and errors and to identify, assess and manage those that occur.
- Understand the role of the pharmacist in the management of medical emergencies.

Practice Management Skills

- Understand the development or modification of policies involving the use of medications in a health system.
- Contribute to the development of a new pharmacy service or to the enhancement of an existing service.

Post-Experiential Requirements

Four months after completing the experiential section of the traineeship, trainees will be required to provide to the ASHP Foundation the following documentation before a certificate will be issued:

- A copy of the proposed policies and procedures that they have submitted to their health system as part of their proposal to involve a pharmacist as a member of the critical care team.
- A report demonstrating that the trainee has become actively involved as a member of the critical care team at their health system site.
- An outline or copy of slides of a presentation about the role of a critical care pharmacist that they presented to associated health care providers.

Qualifications of the Applicant

To qualify for application to the traineeship, the applicant must be a licensed pharmacist in any state in the United States and be a graduate of an ACPE-accredited college or school of pharmacy. The applicant must have completed an ASHP-accredited residency or have 2 years of experience in clinical practice.

Applicants must have a command of basic knowledge areas as they relate to critically ill patients, including pathophysiology, clinical pharmacology and therapeutics, clinical laboratory data interpretation, clinical pharmacokinetics and medical terminology and abbreviations. In addition, applicants should have experience with writing pharmaceutical care plans, conducting patient interviews and delivering educational programs to other members of the health care team.

Upon completion of the program, the applicant will be responsible for personally providing pharmaceutical services to critically ill patients.

Qualifications of the Applicant's Health System

The applicant's employer must be a health care system in the United States with resources for the provision of services for critically ill patients. The chief executive or operating officer of the system and physician who is responsible for the critical care services must confirm, in writing, their commitment to the establishment of a pharmaceutical service for critically ill patients.

Application Procedures

To apply to the traineeship, the applicant must submit four copies of the completed application form plus the following items (the original plus three photocopies):

- Applicant's curriculum vitae, including publication citations.
- A letter from the chief executive or operating officer of their organization confirming a commitment to the establishment of a critical care pharmaceutical service (in which the pharmacist routinely provides pharmaceutical care for critically ill patients), including the expected implementation date.
- A letter from the physician responsible for the management of the critical care or intensive care unit supporting a pharmaceutical service for critically ill patients.

Selection Criteria

All applications will be reviewed by a panel appointed by the ASHP Foundation Board of Directors. The panel will review the applicant's materials and score them according to the following application criteria:

Points	Criteria
15	Academic preparation (degree, residency, certificate programs)
20	Clinical practice and ambulatory care experience (general clinical experience as described qualification of applicant section)
20	Training expectations (expectations of the applicant and proposed duties of pharmacist after training)
20	Institutional viability for service (involvement of pharmacist in care team)
25	Support of administration and physician(s) (support for pharmacist to attend training and commitment of institution to start or enhance service)
100	Total

Applicants receiving the highest scores will be selected as participants in the self-study program. Those selected to participate must pass the continuing education test in order to advance to the experiential program.

Important Program Policies

- The traineeship is awarded to an individual participant.
- No stipend, honorarium or travel expenses are awarded to the participant, and the participant is responsible for providing their transportation to the experiential site as well as lodging.
- The participant will be required to provide the experiential site with proof of liability insurance, vaccinations and HIPAA training.
- The participant will be required to attend all sessions of the program and complete the program evaluation form. On completion of the experiential section of the traineeship, trainees will be required to provide to the ASHP Foundation the following documentation before a certificate will be issued:
 - A copy of the proposed policies and procedures that they have submitted to their health system as part of their proposal to involve a pharmacist as a member of the critical care team.
 - A report demonstrating that the trainee has become actively involved as a member of the critical care team at their health system site.
 - An outline or copy of slides of a presentation about the role of a critical care pharmacist that they presented to associated healthcare providers.
- If the participant must cancel his or her participation, he or she must notify the ASHP Foundation and preceptor at least 4 weeks in advance of the starting date of the experiential portion of the program.

Criteria for Sites and Preceptors

Qualifications of the Site

Health-systems selected as a site for the experiential segment of the traineeship must have a pharmacy service providing care for critically ill patients. The site should have a pharmacist or pharmacists who routinely provide pharmaceutical care for critically ill patients. The administration(s) of the participating institution(s) will provide adequate time to pharmacists and other participants to conduct the Critical Care Traineeship Program. Additionally, the availability of space for lectures, seminars, conferences, and hands-on clinical experiences should be adequately provided.

The proposed training site must be accredited by The Joint Commission or other appropriate organization, when applicable. The institution's department of pharmacy should meet the ASHP Minimum Standards for Pharmacies in Hospitals or other appropriate standards.

In addition, a site must be able to provide 10 days of continuous experiential training, with at least 5 hours per day of direct patient contact (in any combination of time blocks), with critically ill patients or health care colleagues on the critical care unit.

The site must submit a letter from the administrator and physician (on whose service the experiential portion of the traineeship will take place) stating that the health system supports the traineeship program. The availability of multiple experiences is desirable and encouraged to provide a diverse training experience.

Qualifications of the Preceptor

The primary preceptor for the traineeship must be a pharmacist who routinely provides pharmaceutical care for critically ill patients. They must submit a letter from a physician specializing in critical care indicating that the preceptor participates in the design, recommendation, monitoring and evaluation of patient-specific pharmacotherapy for critically ill patients and provides medication-use education to patients and their caregivers where appropriate.

All preceptors for the traineeship must be currently involved in practice-based teaching of pharmacy students or other health care professionals. It is desirable for preceptors to have demonstrated the impact of their practice on outcomes or to have participated in scholarly achievement.

Administration of the Traineeship

The Critical Care Traineeship Program is administered by the ASHP Research and Education Foundation, 7272 Wisconsin Avenue, Bethesda, Maryland, 20814, and is funded through an educational grant from Scios Inc.

The proposed program will be conducted for educational purposes only. The ASHP Foundation will maintain full control of all program development, content and administration in coordination with the program faculty. ASHP Foundation staff will coordinate the following activities:

- Selection of content experts.
- Coordination of all selection panel activities.
- Development and administration of all aspects of the program promotion, application process, selection process and CE administration according to ACPE guidelines and standards.
- Creation, production and distribution of all promotional materials associated with the program.
- Creation, production and distribution of all news releases about program participants.
- Distribution of communication and program updates to the sponsor representatives at mutually agreed upon intervals.
- Distribution of any disclosures to the trainees.

The program was planned and conducted in accordance with the U.S. Food and Drug Administration's Guidelines for Industry-Supported Scientific and Educational Activities and the Accreditation Council for Continuing Medical Education (ACCME) Guidelines for Industry Support. Also, the program was developed according to the "Standards and Quality Assurance Procedures for ACPE-Approved Providers of Continuing Pharmaceutical Education Offering Certificate Programs in Pharmacy." As part of its responsibility, the ASHP Foundation assures that these guidelines and standards are followed in the development and presentation of the program.

Appendix A

The Role of a Pharmacist in Critical Care

The Society of Critical Care Medicine and the American College of Clinical Pharmacy established a Task Force to review the role of pharmacists in the critical care environment. In a position paper describing the results of the review published in 2000 in the *Critical Care Medicine Journal*¹, the authors outline the scope of practice of the critical care pharmacist and of critical care pharmacy services that they identified and recommend. They categorized critical care pharmacy services in terms of "fundamental," "desirable" and optimal "activities."

Fundamental activities include a prospective review of medication orders for appropriate dose, indication, patient allergy and drug interactions; pharmacokinetic monitoring; in-service education; and participation on cardiopulmonary resuscitation teams.

Desirable activities include services such as regularly making rounds in the intensive care unit (ICU); maintaining knowledge of primary sources; reviewing medication records to determine the appropriateness of continuing chronic medications; responding to all resuscitation events 24 hours per day, 7 days per week; providing formal nutrition consultations; participating in research; and contributing to the health care literature.

Optimal activities include assisting physicians in discussions with patients; teaching health care professionals at a variety of levels, including physicians, nurses, pharmacists and technicians; evaluating the impact of new guidelines; promoting new services; and obtaining funds to conduct research.

In addition, the Society of Critical Care Medicine's *Guidelines for Critical Care Services and Personnel* deems pharmacists essential for the delivery of quality care to critically ill patients and recommends that a specialized pharmacist provide such expertise.

Reference to that report justifies the role of a pharmacist in the critical care setting by reduction of mortality and morbidity and greater management of drug costs.²⁻³ In a landmark study comprising a prospective controlled trial by Leape et al,⁴ significant reductions in adverse drug events and length of stay were demonstrated.

Clearly the case for having a dedicated critical care pharmacy and pharmacy service can be justified in all institutions where critically ill patients are treated. They are important and accepted members of critical care teams. For a more complete outline of the benefits of having a dedicated critical care pharmacist and pharmacy service, reference should be made to the complete report of the Task Force *Position Paper on Critical Care Pharmacy Services*¹.

¹ Rudis MI, Brandl KM: Position Paper on critical care pharmacy services, *Crit Care Med* 2000; 28:3746-3749

² Dasta DF, Jacobi J: The critical care pharmacist: What you get is more than what you see, *Crit Care Med* 1994; 22:906-909

³ Bond CA, Raehl CL, Franke T: Clinical Pharmacy Services and hospital mortality rates, *Pharmacotherapy* 1999; 19:556-564

⁴ Leape LL et al.: Pharmacist participation on physician rounds and adverse drug events in the intensive care unit, *JAMA* 1999; 282:267-270