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AACN: Acute and Critical Care Pharmacology

All lessons incorporate a case study approach with patient updates throughout each lesson. Each lesson includes a post-test.

Lesson 1: Patient Safety in Critical Care Medication Administration

- Identifies standards from regulatory bodies
 - OSHA
 - The Joint Commission
 - National Quality Forum
 - Food and Drug Administration
- Culture of safety

New Content

- Expanded the rights of medication administration to include “the right patient education” and “the right to refuse treatment”
- Includes new Joint Commission National Performance Goals 2026, specifically those related to safe medication use, standardized terminology, definitions, abbreviations, and medication reconciliation
- Updated ISMP recommendations for look-alike sound-alike medications.
- Emphasis on the crucial role of clinical pharmacist partners in critical patient care.

Lesson 2: Introduction to Pharmacology Principles I: Pharmacokinetics

- Discusses the four phases of pharmacokinetics (absorption, distribution, metabolism and elimination), factors affecting pharmacokinetics and administration routes
- Explores factors that affect pharmacokinetics, including disease states
- Differentiates different types of adverse drug effects
- Explores impact of aging, gender and genetic composition

New Content

- New APRN consideration added on hormone therapy for transgender individuals
- Revised Consult the Pharmacist answers the question “What happens when a tablet or capsule is inappropriately altered?”
- Revised Safety Alert on transdermal medication to include FDA warnings on scopolamine patches
- Expanded information on intramuscular and subcutaneous injections to include typical injection sites and needle sizes

Lesson 3: Introduction to Pharmacology Principles II: Pharmacodynamics

- Pharmacodynamics
- Medication Actions

New Content

- Updated glossary definitions of peak and trough drug concentration levels, volume of distribution, steady state, and receptor

Lesson 4: Vasoactive Medications

- Sepsis
- Vasoactive medications
- Vasopressors
- Monitoring
- Vasodilators
- Adjunct Interventions for Patients with Acute Traumatic Brain Injury

New Content

- Expanded information on the safe peripheral administration of vasoactive medications and on the treatment of extravasation is included.
- Updated information on the use of vasodilators in patients with traumatic brain injury.
- Updated and clarified sepsis content based on current guidelines on Hour-1 Bundle elements
- Practice Pointer on the impact of skin tone on pulse oximetry added.

Lesson 5: *Antiarrhythmic Medications*

- Cardiac Conduction
- Cardiac Hypoxia and Dysrhythmia Development
- Antidysrhythmic Medications
- Atrial Fibrillation

New Content

- Information on management of atrial fibrillation, including cardioversion, ablation, and anticoagulation, updated based on the 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Patients With Atrial Fibrillation
- Revised resource document “Antiarrhythmic Medications by Classification.”
- Content revised as needed based on updated clinical practice guidelines from:
 - 2025 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
 - 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Patients With Atrial Fibrillation
 - 2025 Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines
 - 2025 Guideline for the Management of Patients With Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

Lesson 6:

Neuromuscular Blocking Agents

- Understanding Skeletal Muscle Contraction
- Neuromuscular Blockers
- Depolarizing Neuromuscular Blockers
- Non-depolarizing Neuromuscular Blockers
- Monitoring Therapeutic Paralysis
- Discontinuing Therapeutic Paralysis
- Nursing Management

New Content

- The minimized usage of neuromuscular blocking agents is emphasized except in narrow patient populations due to complications of neuromuscular blockade
- Eye care recommendations updated
- Added new content on prone positioning

Lesson 7: Medications for Pain and Sedation

- Pain: Definition
- Pain: Physiology and Nociception
- Pain: Acute and Chronic Forms
- Pain Assessment
- Pain Management
- Sedation

New Content

- Clarified the difference between self-reported pain and behavioral assessments
- Added information on the importance of naloxone prescriptions for patients at high risk of opioid overdose
- Clarified concepts of opioid tolerance, dependence, and withdrawal
- Updated usage recommendations for dexmedetomidine and propofol based on 2025 A Focused Update to the Clinical Practice Guidelines for the Prevention and Management of Pain, Anxiety, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU.
- Expanded information on non-medical use of prescription medicines, such as opioids, and prescription monitoring programs
- Warning about ketamine dependence and misuse added
- Revised sedation levels based on the American Society of Anesthesiologists. Statement on Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia
- Revised APRN Consideration on the use of NSAIDs and acetaminophen for perioperative pain management based on current evidence

Lesson 8: Blood and Blood Products

- Volume Replacement
- Transfusion Preparation and Products
- Blood Bank Processing and Testing
- Transfusion Equipment and Verification
- Blood Bank Processing and Testing
- Transfusion Administration
- Transfusion Reactions

New Content

- Updated statistics on the use of blood and blood products in the United States

- Myth vs. Fact updated to reflect current recommendations for the use of whole blood in patients with trauma
- Recommendations for platelets updated based on Platelet Transfusion 2025 AABB and ICTMG International Clinical Practice Guidelines
- Safety Alert on tranexamic acid updated based on the Institute for Safe Medication Practices and the Anesthesia Patient Safety Foundation joint safety statement
- Updated guidance on permissive hypotension, crystalloids and fluid resuscitation, colloids, trauma resuscitation strategies, transfusion thresholds, and safe transfusion practices based on current evidence and the following updated guidelines and resources:
 - America's Blood Centers and the Association for Blood Donor Professionals. U.S. Blood Donation Statistics and Public Messaging Guide. February 2026. Version 3.0
 - Association for the Advancement of Blood & Biotherapies (AABB), American Red Cross, America's Blood Centers, Armed Services Blood Program. Circular of information for the use of human blood and blood components [Watermarked PDF]. AABB. June 2024
 - Joint Commission. 2026 National Performance Goals
 - Advanced Trauma Life Support (ATLS) 2025 guidelines
 - Platelet Transfusion 2025 AABB and ICTMG International Clinical Practice Guidelines
 - Red Blood Cell Transfusion 2023 AABB International Guidelines

AACN: Acute and Critical Care Pharmacology includes current standards as they relate to safe medication administration from professional, regulatory and certifying bodies, including:

- American Association of Critical-Care Nurses (AACN)
- The Joint Commission (TJC)
- Society for Critical Care Medicine (SCCM)
- National Quality Forum (NQF)
- American Heart Association (AHA)
- American College of Cardiology (ACC)
- AABB (formerly known as the American Association of Blood Banks)
- American Society for Pain Management Nursing (ASPMN)

AMERICAN
ASSOCIATION
of CRITICAL-CARE
NURSES

- American Society for Health-System Pharmacists (ASHP)
- American Society of Anesthesiologists (ASA)
- American College of Clinical Pharmacy (ACCP)
- American College of Surgeons (Committee on Trauma) (ACS)