

Essentials of Critical Care Orientation (ECCO)

Module Titles and Descriptions

ICU and PCU

Global Perspectives in the Care of Critically Ill Patients: Part 1	2	Caring for Patients With Neurologic Disorders: Part 1	12
Global Perspectives in the Care of Critically Ill Patients: Part 2.....	3	Caring for Patients With Neurologic Disorders: Part 2.....	13
Caring for Patients With Cardiovascular Disorders: Part 1	4	Caring for Patients With Gastrointestinal Disorders	14
Caring for Patients With Cardiovascular Disorders: Part 2	5	Caring for Patients With Renal Disorders: Part 1	16
Caring for Patients With Cardiovascular Disorders: Part 3	6	Caring for Patients With Renal Disorders: Part 2 ICU Only	17
Caring for Patients With Cardiovascular Disorders: Part 4	7	Caring for Patients With Endocrine Disorders	18
Caring for Patients With Pulmonary Disorders: Part 1	8	Caring for Patients With Hematological Disorders	19
Caring for Patients With Pulmonary Disorders: Part 2	9	Caring for Patients With Multisystem Disorders	20
Hemodynamic Monitoring of Critically Ill Patients: Part 1	10		
Hemodynamic Monitoring of Critically Ill Patients: Part 2	11		

ECCO: Global Perspectives in the Care of Critically Ill Patients: Part 1

MODULE DESCRIPTION:

This module provides content on concepts and frameworks that impact and support nursing practice in all clinical settings, including continuing professional development, team competence and approaches to moral distress, implementing evidence-based practice and key elements of patient safety.

Essential frameworks presented include:

- AACN Healthy Work Environment Standards
- Patient- and Family-Centered Care

Content also includes care perspectives for two special populations: older adults and patients with bariatric conditions.

Optional content is presented in the resources in PDF form on the topics Regulatory Measures and Hospital Impact, and the AACN Synergy Model.

CE INFORMATION:

Up to 3.45 ICU/3.54 PCU ANCC contact hours. CERP B.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 3.45 ICU/3.54 PCU contact hours.

GLOBAL PERSPECTIVES PART 1 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Professional Nursing Practice Frameworks

Continuing Professional Development

- Introduction
- Lifelong Learning
- Skill Areas
- Learning Resources

Team Competence

- Introduction
- Core Competencies
- Collaboration and Integration
- Teamwork

Embracing Change

- Introduction
- Barriers to Change
- Strategies for Success

Ethics and Moral Distress

- Introduction
- Common Causes
- A Distressing Situation
- Negative Impacts
- Individual Strategies
- Seek Support and Take Action
- Unit-Level Strategies

Frameworks for Practice

Healthy Work Environments (HWEs)

- Introduction
- Six Standards
- Skilled Communication
- Communicating Effectively
- True Collaboration
- Effective Decision Making
- Other HWE Standards

Patient Safety

- Introduction
- Attributes of a Safety Culture
- Transition Planning
- Communication Handoff
- Safe Transport
- Common Adverse Events

Evidence-based Practice (EBP)

- Introduction
- Care Decisions Based on Evidence
- Common Barriers
- Sources of Evidence

Patient- and Family-Centered Care

- Introduction
- Family Needs
- Communication Plan

Special Populations

Older Adult Populations

- Introduction
- Physiologic Domain
- Physical Domain
- Cognitive Domain
- Psychosocial Domain
- Evidence-based Practices
- Geriatric Syndromes

Bariatric Populations

- Introduction
- Comorbidities
- Pulmonary Complications
- Cardiac Complications
- Skin Care
- Thrombosis
- Dignity and Value

ECCO: Global Perspectives in the Care of Critically Ill Patients: Part 2

MODULE DESCRIPTION:

This module includes:

- Evidence-based assessment and management of pain, agitation and delirium
- Post-intensive care syndrome and the interventions to decrease its incidence and impact, including the ABCDEF bundle
- Common healthcare-associated infections and other risks such as VTE, CAUTI and HAPU

Module concludes with a discussion of organizing and coordinating care throughout the hospital stay, as well as managing patients receiving procedural sedation and those recovering from anesthesia.

Content on anesthesia recovery is included in the ICU module only.

CE INFORMATION:

Up to 4.4 ICU/4.41 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.4 ICU/4.41 PCU contact hours.

GLOBAL PERSPECTIVES PART 2 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Pain, Agitation, and Delirium

Managing Pain and Agitation

- Introduction
- Daily Goals Worksheet
- Pain and Physiologic Response
- Pain Assessment
- Pain Management
- Agitation and Anxiety
- Agitation and Sedation

Delirium

- Introduction
- Risk Factors
- Assessment
- Subtypes of Delirium
- Stop, Think, and (last) Medicate
- Early Progressive Mobility Protocol

Post-Intensive Care Syndrome (PICS)

- Introduction
- PICS Model
- Management Strategies
- Coping Skills
- Strategies for Discharge

ABCDEF Bundle

- Introduction
- Apply the ABCDEF Bundle **ICU Only**
- Surveillance and Strategies **ICU Only**

Complications of Critical Illness

Healthcare-Associated Infections

- Introduction
- CLABSI
- VAE/VAP
- CAUTI

Other Complications

- Introduction
- Venous Thromboembolism (VTE)
- Hospital-acquired Pressure Injuries (HAPIs)
- Sleep Disruption
- Gastritis/Stress Ulcers

Prioritizing and Organizing Care

Pre-admission

- Introduction
- Preparation
- Specific Room Setup
- Patient Update
- Identify Immediate Needs

Admission

- Patient Update
- Quick Assessment First
- Interpret Assessment Findings
- Comprehensive Assessment
- Establishing a Baseline

Ongoing Care

- Patient Update
- Ongoing Focused Assessments
- Ongoing Reassessments
- Anticipating Complications
- Preventing Complications Strategies

Special Situations

Procedural Sedation

- Introduction
- Types of Procedures
- Phases of Sedation Care (Phases 1, 2, 3)
- Complications

Post-Anesthesia Recovery **ICU Only**

- Introduction
- Types of Anesthesia Delivery
- Post-Anesthesia Care
- Potential Complications
- Interventions

Palliative and End-of-Life Care

Palliative Care

- Introduction
- Continuum of Care
- Anxiety
- Dyspnea
- Delirium
- Pain

End-of-Life Care

- Patient Introduction
- Patient Update
- Family Conference
- Transition to Comfort Care
- Compassionate Extubation
- Withdrawal of Mechanical Circulatory Support

ECCO: Caring for Patients With Cardiovascular Disorders: Part 1

MODULE DESCRIPTION:

This module reviews fundamental information about cardiovascular system assessment and diagnostic testing for critically ill patients.

Acute coronary syndromes are described, including:

- Pathophysiologic differences
- Diagnostic testing
- Medical and interventional treatment priorities for ST-elevation MI, non-ST-elevation MI and unstable angina
- Complications of MI including clinical signs and patient management, are addressed
 - ICU track includes brief discussions on ventricular support devices and targeted temperature management (TTM); PCU track offers an optional PDF resource with indications and anticipated benefits of each.
 - PCU track includes brief discussions on core measures, discharge planning/ cardiac rehab and patient education

CE INFORMATION:

Up to 3.75 ICU/4.22 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 3.75 ICU/4.22 PCU contact hours.

CARDIO PART 1 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Assessing the Cardiovascular System

Assessing Symptoms

- Patient Introduction
- Signs and Symptoms
- Causes of Chest Pain and Assessment
- Causes of Dyspnea
- Patient Interview
- GERD or ACS

Auscultating

- Patient Update
- Auscultation Overview
- Anatomical Landmarks
- Heart Sounds
- Classifying Murmurs
- Identifying Heart Sounds

Diagnosing ACS

Differentiating ACS Pain

- Patient Update
- Characteristics of ACS Pain
- Signs and Symptoms of STEMI
- Etiologies of Fatal MIs
- Types of Angina
- Ischemic Myocardial Disease
- Chest Pain Protocol

Identifying Ischemia and Infarction

- Patient Update
- 12-Lead ECG Tracing
- LMCA Infarction
- Posterior MI
- 12-Lead ECG Summary
- ECG Tracing

Interpreting Biomarkers

- Introduction
- Cardiac Biomarkers
- Rise and Fall of Biomarkers
- Cardiac Biomarker Frequency
- 9-Hour Biomarkers

Myocardial Oxygen Supply and Demand

- Introduction
- Oxygen Balance
- Preload
- Contractility
- Afterload
- Oxygen Supply
- Monitoring and Medications

Treating ACS

Treating a Patient With STEMI

- Patient Introduction
- Treatment Goals
- Thrombus
- Monitoring Patient Response
- ACS Medications
- Reperfusion
- Fibrinolytic Agents

Treating Patients With Non-STEMI and UA

- Patient Introduction
- Non-STEMI and UA
- Treatment Pathways
- Non-STEMI Treatment
- Types of UA
- UA Treatment
- Treatment Comparison

Complications

Pulmonary Edema

- Topic Introduction
- Patient Assessment
- Communicate With Provider
- Myocardial Dysfunction
- Patient Update
- Patient Care Priorities
- Treatment Response

RVMI

- Patient Introduction
- Blood Supply
- Signs of RVMI
- Diagnostic Tests
- Pathophysiology **ICU Only**
- RVMI Interventions
- Management of Patients With RVMI

Cardiogenic Shock

- Patient Introduction
- Cardiogenic Shock:
 - Signs and Symptoms
 - Pathophysiology
 - Treatment
- Ventricular Support Devices
 - **Extra ICU-Only Content**

Other Complications

- Topic Introduction
- Reinfarction
- Dysrhythmias
- Papillary Muscle Rupture
- ROSC **ICU Only**
- Achieving TTM **ICU Only**

Cardiac Procedures

Noninvasive Cardiac Procedures

- Topic Introduction
- Echocardiogram (ECHO)
- TEE
- Comparing TTE and TEE
- Stress Testing **PCU Only**
- Cardiac CT **PCU Only**

Invasive Cardiac Procedures

- Topic Introduction
- Cardiac Catheterization
- Left Ventriculography
- Right-Heart Catheterization
- Percutaneous Coronary Interventions (PCIs)

Pre-Procedure Care

- Patient Update
- PCI Pre-Procedure Care
- Patient Care Priorities

Post-Procedure Care

- Patient Update
- Patient Care Priorities
- Vascular Access Site Assessment
- Fluid Therapy
- Patient Education
- Focused Assessments
- Complications and Interventions

MODULE DESCRIPTION:

This module explores a variety of cardiovascular disorders, including:

- Inflammatory diseases
- Congenital and acquired structural defects
- Aortic aneurysm, aortic dissection
- Peripheral vascular disease
- Select electrophysiologic disorders and treatments, including long QT syndrome, pacemakers and ICDs

Each topic explores assessments, evidence-based interventions and strategies to prevent complications.

Septal defect and transvenous pacing content is available to PCU in an optional PDF resource.

CE INFORMATION:

Up to 4.64 ICU/4.17 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.64 ICU/4.17 PCU contact hours.

CARDIO PART 2 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Cardiovascular Disorders

Hypertensive Crisis

- Patient Introduction
- Signs and Symptoms
- Organs at Risk
- Etiologies
- Treatment
- Complications

Septal Defects **ICU Only**

- Topic Introduction
- Ventricular Septal Defects
- Complications

Acute Inflammatory Diseases

- Topic Introduction
- Myocarditis
- Endocarditis
- Pericarditis
- Differentiating Diagnoses

Cardiac Tamponade

- Patient Introduction
- Signs and Symptoms
- Etiologies
- Pathophysiology
- Pericardiocentesis
- Response to Intervention

Vascular Disorders

Aortic Aneurysm

- Topic Introduction
- Defining Aortic Aneurysm
- Thoracic Aortic Aneurysm
- Abdominal Aortic Aneurysm
- Imaging Exams
- Medication
- Surgical or Endovascular Repair

Aortic Dissection

- Patient Introduction
- Signs and Symptoms
- Progression
- Pharmacologic Interventions **ICU Only**
- Treatment **ICU Only**
- Complications **ICU Only**

Aortic Repair

- Topic Introduction
- Types of Repair
- Types of Dissection
- Communicating Effectively

Carotid Artery Stenosis

- Patient Introduction
- Symptoms and Diagnostics
- Pathophysiology
- Treatment
- Complications

Peripheral Artery Disease (PAD)

- Patient Introduction
- Assessment
- Diagnostics **PCU Only**
- Management **PCU Only**
- Complications **PCU Only**

Pacemakers and ICDs

Introduction to Pacemakers

- Topic Introduction
- Temporary Pacing Indications
- Pacemaker Components
- Pacemaker Settings
- Temporary Pacemaker Setup
- Permanent Pacing Indications

Types of Temporary Pacing

- Topic Introduction
- Transcutaneous Pacing
- Transvenous Pacing **ICU Only**
- Epicardial Pacing
- Communicating Effectively

Pacemaker Modes

- Topic Introduction
- Codes

Troubleshooting Pacemakers

ICU Only

- Patient Introduction
- ECG Tracing
- Malfunctions
- Troubleshooting Steps

Implanted Cardioverter Defibrillator

- Patient Introduction
- Indications
- Response to V-Tach/V-Fib
- Programmed Therapies
- Inappropriate Shocks
- Temporary ICD Suspension

Electrophysiology

Long QT Syndrome (LQTS)

- Topic Introduction
- Defining LQTS
- Causes of Acquired LQTS
- Risk Factors for Acquired LQTS
- Prolonged QTc
- Calculating QTc
- Treating Acquired LQTS

Cardioversion

- Patient Introduction
- Defining Cardioversion
- Indications
- Procedure

Defibrillation

- Patient Update
- Defining Defibrillation
- Electrode Pads vs. Paddles
- Procedure

Electrophysiology Studies (EPS) & Radiofrequency Ablation (RFA)

- Patient Introduction
- EPS Procedure
- Patient Update
- RFA Indications
- RFA Procedure

MODULE DESCRIPTION:

This module addresses the following:

- Various cardiomyopathies (dilated, hypertrophic, stress-induced and restrictive)
- Types of heart failure (systolic, diastolic and right-sided)
- Valvular heart disease

Learners will apply an understanding of the different pathophysiologies to interpretation of clinical presentation and patient care management priorities.

Optional content for “Stress-Induced and Restrictive Cardiomyopathies” are available in PDF resource.

CE INFORMATION:

Up to 3.15 ICU/PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center’s Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 3.15 contact hours.

CARDIO PART 3 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Cardiomyopathies

Dilated Cardiomyopathy

- Topic Introduction
- Pathophysiology
- Compensatory Mechanisms
- Understanding Relationships
- Signs and Symptoms
- Diagnostic Testing
- Assessment Findings

Hypertrophic Cardiomyopathy

- Patient Introduction
- Signs and Symptoms
- Pathophysiology
- Diagnostic Tests
- Patient Update
- Treatment Priorities
- Treatment Outcomes

Stress-Induced Cardiomyopathy

- Patient Introduction
- Takotsubo
- Potential Complications
- Recovery Process

Restrictive Cardiomyopathy

- Topic Introduction
- Pathophysiology
- Signs and Symptoms
- Meeting Patient Needs

Heart Failure

Systolic Heart Failure Assessment

- Patient Introduction
- Compensatory Mechanisms
- Classifications
- Signs and Symptoms
- Diagnostic Tests
- Patient Assessment
- Indications

Systolic Heart Failure Treatment

- Patient Update
- Treatment Goals
- Treatment Overview
- Effects on Compensation
- Complications
- Treatments

Diastolic Heart Failure

- Topic Introduction
- Diastolic Dysfunction
- Pathophysiology
- Signs and Symptoms
- Diagnostic Tests
- Patient Assessment
- Treatments

Right-sided Heart Failure

- Topic Introduction
- Etiology
- Patient Assessment
- Assessment Findings
- Treatment Priorities
- Response to Treatment

Patient Education

- Patient Update
- Discharge Planning Considerations
- Patient Education Priorities
- Teach-Back
- Patient Conclusion

Valvular Heart Disease

Aortic Regurgitation

- Patient Introduction
- Pathophysiology
- Signs and Symptoms
- Chronic: Patient Assessment & Treatments
- Acute: Patient Assessment & Treatments

Aortic Stenosis

- Topic Introduction
- Pathophysiology
- Signs and Symptoms
- Patient Assessment
- Treatment Priorities

Mitral Regurgitation

- Topic Introduction
- Pathophysiology
- Signs and Symptoms
- Chronic: Assessment
- Chronic: Treatment Priorities
- Acute: Surgical Treatment
- Acute: Medical Treatment

Mitral Stenosis

- Topic Introduction
- Presentation
- Signs and Symptoms
- Assessment
- Treatment Priorities
- Treatment Responses

Interventional and Surgical Treatments

- Topic Introduction
- Types of Treatments
- Percutaneous and Catheter-based Treatments
- Post-Procedure Care

ECCO: Caring for Patients With Cardiovascular Disorders: Part 4

MODULE DESCRIPTION:

This module explores the following:

- Coronary artery bypass grafting
- Cardiac valve repair and replacement
- Surgical approaches
- Physiologic effects of cardiopulmonary bypass
- Expected patient course
- Identification of patient care priorities
- Recognition and management of potential complications

The topic "The First 24 Hours: ICU-only Patient Care Assignment on Postoperative Care" is included in the ICU-only module.

CE INFORMATION:

Up to 4.48 ICU/2.42 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.48 ICU/2.42 PCU contact hours.

CARDIO PART 4 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Preoperative and Intraoperative Management

CABG

- Patient Introduction
- CABG Indications
- OPCAB
- MIDCAB
- Bypass Conduits
- Patient Care Considerations
- Patient Update

Valve Surgery

- Topic Introduction
- Indications
- Replacement Risk Factors
- Mechanical and Tissue Valves
- Patient Care Considerations

Preoperative Patient Care

- Patient Update
- Patient Care Priorities
- Diagnostic Workup
- Diagnostic Studies
- Medications Prior to Surgery

Intraoperative Patient Care*

- Patient Update
- CPB Interventions
- Inflammatory Response
- SIRS Treatment Priorities
- Catecholamines and HTN
- RAAS Activation
- Additional Systemic Effects

**This topic is included to educate nurses on intraoperative conditions that affect postoperative management.*

Postoperative Management

First 24 Hours: ICU-Only Patient Care **ICU Only**

- Topic Introduction
- Communicate Effectively
- Hypothermia Outcomes
- Patient Assessment
- Patient Care Priorities
- Patient Update
- Extubation

First 24 Hours: Patient Care

- Topic Introduction
- Patient Update
- Fluid Imbalances
- Glycemic Control
- Patient Update
- Mobility
- Patient Care Priorities

First 24 Hours: Complications

- Topic Introduction
- Excessive CT Output **ICU Only**
- Cardiac Output Assessment **ICU Only**
- Cardiac Tamponade Assessment
- Dysrhythmia Treatments
- Neurologic Deficits
- Pulmonary Complications

Beyond 24 Hours: Patient Care

- Topic Introduction
- Patient Assessment at 24 Hours
- Cardiac Rehabilitation
- Interventions
- Patient Update
- Discharge Teaching

TAVR*

TAVR Selection and Procedure

- Patient Introduction
- Eligibility and Site Selection
- Procedure
- Patient Update

**TAVR = Transcatheter aortic valve replacement*

Postoperative Patient Care

- Patient Update
- Patient Care Priorities
- TAVR Approaches
- Complications
- Conduction Abnormality Risk
- Additional Patient Care
- Treatments

ECCO: Caring for Patients With Pulmonary Disorders: Part 1

MODULE DESCRIPTION:

This module provides an in-depth review of pulmonary assessment techniques, including lung sounds, diagnostic tests and arterial blood gas interpretation. Additionally, this module provides a review of oxygen delivery devices and noninvasive positive pressure ventilation.

Additional reviews include management of the following disorders:

- Pulmonary hypertension
- Pulmonary emboli
- Pneumonia
- Acute respiratory failure
- Asthma
- Chronic obstructive pulmonary disease
- Acute respiratory distress syndrome and pleural space abnormalities, including pneumothorax and hemothorax.
- Nursing priorities for managing post-pneumonectomy and post-thoracotomy

Within each topic, assessments, interventions and potential complications are explored.

CE INFORMATION:

Up to 5.47 ICU/PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 5.47 contact hours.

PULMONARY PART 1 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Assessment, Diagnostics and Monitoring

Pulmonary Assessment

- Topic Introduction
- Auscultation Procedure
- Normal Breath Sounds
- Abnormal Breath Sounds
- Adventitious Breath Sounds
- Recognizing Breath Sounds
- Calculating P/F Ratio

Diagnostic Testing

- Topic Introduction
- Chest X-Ray
- CT, MRI and V/Q Scan
- Bronchoscopy
- Patient Care Priorities

Optional content on radiographs is available as a PDF resource.

Monitoring

- Topic Introduction
- SpO₂ Monitoring
- EtCO₂ Monitoring
- Monitoring Oxygenation and Ventilation

Managing Oxygenation and Ventilation

ABG Analysis

- Topic Introduction
- Acid-Base Balance
- ABG Decision Grid
- Acid-Base Disorder

Oxygen Delivery

- Topic Introduction
- Supplemental Oxygen Indicators
- Supplemental Oxygen Devices
- Indicators for Advancement

Positive Pressure

- Topic Introduction
- Indications and Contraindications
- Comparing CPAP and BiPAP
- Endotracheal Intubation

Pulmonary Disorders

Pulmonary Hypertension

- Patient Introduction
- Disease Progression
- Clinical Presentation
- Patient Management
- Pharmacologic Therapies
- Patient Care Priorities **ICU Only**

Pulmonary Emboli

- Topic Introduction
- Etiology and Risk Factors
- Clinical Presentation
- Treatment Outcomes

Pneumonia

- Topic Introduction
- Etiology
- Risk Factors
- Clinical Presentation
- Meeting Patient Needs

Asthma/Status Asthmaticus

- Topic Introduction
- Pathophysiology of Asthma
- Pathophysiology of Status Asthmaticus
- Interventions

COPD

- Patient Introduction
- Etiology
- Pathophysiology
- Signs, Symptoms and Assessment
- Therapies
- Patient Care Priorities

Respiratory Failure and ARDS*

Respiratory Failure

- Patient Introduction
- Pathophysiology
- Diagnostic Testing
- Patient Care Priorities

**ARDS = Acute Respiratory Distress Syndrome*

ARDS

- Patient Update
- Berlin Definition
- Pathological Response **ICU Only**
- Patient Care Priorities
- Alveolar Ventilation
- Monitoring and Interventions

Pleural Space Abnormalities

Pneumothorax and Hemothorax

- Topic Introduction
- Pathophysiology
- Spontaneous Pneumothorax
- Signs and Symptoms
- Patient Presentations
- Treatment

Pleural Effusions

- Topic Introduction
- Signs and Symptoms
- Management Strategies
- Empyema

Thoracentesis and Chest Tubes

- Topic Introduction
- Thoracentesis Procedure
- Chest Tubes
- Closed-Chest Drainage Systems
- Drainage Chambers
- Chest Tube Placement Procedure

Thoracic Surgical Procedures

Overview of Procedure

- Topic Introduction
- Types of Invasive Procedures
- Lung Surgeries

Thoracotomy and Pneumonectomy

- Topic Introduction
- Postsurgical Interventions
- Patient Education
- Respiratory Failure
- Pain Management
- Pneumonectomy

ECCO: Caring for Patients With Pulmonary Disorders: Part 2

MODULE DESCRIPTION:

This module provides an in-depth review of managing the patient who is receiving invasive mechanical ventilation.

The following nursing priorities are identified:

- Managing patients with endotracheal vs. tracheostomy tubes
- Assessing readiness for weaning
- Weaning
- Extubation vs. decannulation
- Preventing complications associated with mechanical ventilation

Within each topic, assessments, evidence-based interventions and strategies to prevent complications are explored.

Content specific to patients receiving neuromuscular blockade is available in the ICU module only.

CE INFORMATION:

Up to 2.76 ICU/3.45 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 2.76 ICU/3.45 PCU contact hours.

PULMONARY PART 2 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Invasive Ventilation

Endotracheal Intubation

- Patient Introduction
- Indications for Intubation
- ETT Placement
- Post-Intubation Priorities
- Preventing Complications

Tracheostomy Tubes

- Patient Introduction
- Indications for Tracheostomy
- Types of Tubes
- Tracheostomy Care
- Emergent Reinsertion
- Mucous Plugging

Mechanical Ventilation

- Topic Introduction
- Ventilator Settings
- Ventilator Cycle Events
- Volume and Pressure Ventilation
- Volume Ventilation
- Pressure Ventilation
- Nursing Priorities

Troubleshooting Ventilators

- Topic Introduction
- Ventilator Panel Controls
- Alarm Causes and Nursing Actions
- Nursing Priorities

Managing the Ventilated Patient

Spontaneous Awakening Trials (SATs*)

- Patient Update
- SAT Safety Screen
- Patient Care Priorities
- Failed Sedation Interruption

**SAT = Spontaneous Awakening Trial*

Neuromuscular Blockade ICU Only

- Topic Introduction
- Preventing Complications
- Train-of-Four
- Pain and Sedation Assessment
- Pain and Neurologic Assessment

Preventing Complications

- Topic Introduction
- Cardiovascular Complications
- Pulmonary Complications
- Multisystem Complications
- Gastrointestinal Complications

Weaning From Ventilation

- Topic Introduction
- SBT* Safety Screen Criteria
- Assessing Weaning Readiness
- SBT Goals
- Facilitating the Weaning Process
- Weaning Approaches
- Long-Term Ventilation Weaning

**SBT = Spontaneous Breathing Trial*

Extubation and Decannulation

- Topic Introduction
- Extubation Equipment
- Extubation Procedure
- Patient Care Priorities
- Decannulation Equipment
- Decannulation Procedure
- Reintubation Precautions

ECCO: Hemodynamic Monitoring of Critically Ill Patients: Part 1

MODULE DESCRIPTION:

This module provides an in-depth review of hemodynamic monitoring systems for arterial and central venous pressure monitoring.

Topics include:

- Basics of components
- Setup for hemodynamic monitoring
- Arterial pressure monitoring
- Waveform analysis
- Central venous pressure (CVP) monitoring
- CVP waveform analysis

Each topic area explores measures to ensure accuracy, troubleshoot hemodynamic monitoring systems and prevent complications.

CVP waveform analysis and clinical application is an ICU-only topic and included in the ICU module only.

CE INFORMATION:

Up to 4.39 ICU/4.1 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.39 ICU/4.1 PCU contact hours.

HEMODYNAMIC PART 1 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Basics of Hemodynamic Monitoring Systems

Components and Functions

- Topic Introduction
- Closed Fluid-Filled Systems
- Component Functions
- External Equipment Functions

Obtaining Accurate Values

- Topic Introduction
- Ensure Accurate System Values
- Level the Air-Fluid Interface
- Locate the Phlebostatic Axis
- Dynamic Response Test
- Ensure Optimal Waveforms
- Patient Safety

Arterial Pressure Monitoring

Basics of Arterial Catheters

- Topic Introduction
- Catheter Insertion Sites
- Allen's Test
- System Setup
- Insertion Procedure

Complications of Arterial Monitoring

- Topic Introduction
- Common Complications
- 3-Way Stopcock
- Patient Safety
- Interventions

Arterial Waveforms

- Topic Introduction
- Arterial Waveform Pattern
- Common Waveform Alterations
- Clinical Interpretation of Waveform Features
- Calculate Mean Arterial Pressure (MAP)

Measurement of Arterial Pressure

- Topic Introduction
- Measure of Hydrostatic Pressure
- Indirect Methods of Monitoring BP
- Verify Waveform Accuracy

Removing Arterial Monitoring Systems

- Topic Introduction
- Procedural Steps

Central Venous (CV) Catheters

Catheter Types, Sites and Techniques

- Topic Introduction
- Physiology of CVP Monitoring
- Types of CV Catheters
- Insertion Sites
- Patient Introduction
- Team Communication

Managing Central Venous (CV) Catheters

- Topic Introduction
- Prevent Bloodstream Infections
- Maintain Sterile Technique
- Insertion Procedure
- Multi-Lumen CV Catheter Ports

Waveform Analysis and Clinical Application **ICU Only**

- Patient Update
- Measuring CVP
- Components of CVP Waveform
- Measuring Mean CVP
- Altered Waveforms
- Causes of Abnormal CVP

Complications*

- Patient Update
- Common Complications
- Interventions

**Includes information on preventing air embolism during insertion and removal of central venous catheters*

ECCO: Hemodynamic Monitoring of Critically Ill Patients: Part 2

MODULE DESCRIPTION:

This module provides an in-depth review of nursing priorities for the following:

- Hemodynamic monitoring
- Pulmonary artery pressure monitoring **ICU Only**
- Assessment
- Consequences of cardiac output monitoring
- Assessment and interventions for oxygenation and oxygen transport
- Alterations in preload, afterload and contractility

Each topic area will explore measures to ensure accuracy, troubleshoot monitoring issues, intervene for alterations and prevent complications.

The assignment titled "Pulmonary Artery Catheters" is available in the ICU module only.

CE INFORMATION:

Up to 5.2 ICU/4.79 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 5.2 ICU/4.79 PCU contact hours.

HEMODYNAMIC PART 2 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Pulmonary Artery (PA) Catheters

ICU Only

Indications for PA Catheters

ICU Only

- Patient Introduction
- Indications for PA Catheter
- Uses of PA Catheters
- Precautions, Relative Contraindications

Catheter Types **ICU Only**

- Topic Introduction
- Types of PA Catheters
- PA Catheter Ports

Catheter Insertion **ICU Only**

- Patient Update
- Catheter Insertion Sites
- Insertion Procedure Tasks
- Monitor Waveforms
- Obtaining PAOP
- Balloon Inflation Safety Alert
- Verify Catheter Placement

Waveform Analysis **ICU Only**

- Topic Introduction
- Components of PAP Waveform
- Measure PA Pressures at End-Expiration
- PAOP Waveform
- Measure Mean PAOP
- Overwedge
- Conditions That Change Waveforms

Complications and Associated Problems **ICU Only**

- Topic Introduction
- Insertion-related Complications
- Equipment and Catheter Problems
- Patient-related Complications
- CLABSI
- PA Rupture

Cardiac Output

Factors Affecting Cardiac Output

- Topic Overview
- Cardiac Output Factors
- Cardiac Index
- Stroke Volume Index (SVI)
- Preload
- Afterload
- Contractility

Measuring Cardiac Output **ICU Only**

- Topic Introduction
- Calculation Methods
- Intermittent Bolus Thermodilution
- Ensuring Accuracy in TDCO
- Continuous Cardiac Output (CCO)
- Factors Affecting CCO Measurements

Clinical Application of Cardiac Output

- Patient Update
- Hemodynamic Instability
- Causes of Low Cardiac Output **ICU Only**
- Assessing Low Cardiac Output
- Elevated Cardiac Output

Minimal and Noninvasive Monitoring

- Topic Introduction
- Types of Minimally Invasive Cardiac Output Monitoring
- Functional Hemodynamics
- Passive Leg Raise (PLR) Maneuver
- Simplified Treatment Algorithm
- Fluid and Titration Interventions

Oxygenation and Transport

Oxygen Supply and Demand

- Topic Introduction
- Tissue Perfusion
- Oxygen Supply
- Oxygen Delivery (DO₂)
- Mixed Venous Oxygen Saturation (SvO₂)
- SvO₂ and ScvO₂
- Oxygen Supply/Demand Imbalance

Conditions Affecting Oxygen Monitoring

- Topic Overview
- DO₂/VO₂ Imbalances
- Conditions Increasing Oxygen Demand
- Indicators of Oxygen Imbalance
- Causes of Decreased SvO₂/ScvO₂
- Causes of Increased SvO₂/ScvO₂
- "Good Lung, Bad Lung"

Clinical Applications

- Topic Introduction
- Continuous SvO₂ and ScvO₂ Monitoring
- Improving Oxygen Supply and Reducing Demand

Pharmacological Management

Managing Preload

- Patient Update
- Measures of Preload
- Crystalloids
- Colloids
- Blood Products
- Monitoring Preload
- Preload Reducers

Managing Afterload

- Topic Introduction
- Conditions That Elevate PVR*
- Reducing PVR
- Systemic Vascular Resistance (SVR)
- Vasodilators
- Vasopressors
- Vasoactive Infusion Extravasation

*PVR = Pulmonary Vascular Resistance

Managing Contractility

- Patient Update
- Positive Inotropes
- Negative Inotropic Medications
- Treatment and Titration

ECCO: Caring for Patients With Neurologic Disorders: Part 1

MODULE DESCRIPTION:

This module provides an in-depth review of neurologic assessment techniques, including:

- Standardized scales
- Diagnostic tests
- Intracranial pressure monitoring
- Overview of death by neurologic criteria
- Vital sign evaluation

Nursing priorities for the patient with intracranial pressure (ICP) monitoring include:

- Use of invasive ICP monitoring
- ICP waveform analysis **ICU Only**
- Setup, maintenance and troubleshooting cerebral spinal fluid drains

Each topic area explores measures to ensure accuracy, troubleshoot monitoring issues, intervene for alterations and prevent complications.

Optional content for PCU on ICP monitoring, waveform analysis and other monitoring is available as PDF resource.

CE INFORMATION:

Up to 4.35 ICU/3.45 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.35 ICU/3.45 PCU contact hours.

NEURO PART 1 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Special Assessment Techniques

LOC and Mental Status (includes Speech and Delirium)

- Topic Introduction
- Types of Neurologic Exams
- Assessing LOC
- Assessing Mental Status
- Types of Aphasia
- Dysarthria
- Assessing Cognition and Mental Status

Motor and Sensation

- Topic Introduction
- Assessing Motor Function
- Evaluating Pronator Drift
- Assessing Sensation
- Assessing Sensation in Patients With SCI*

*SCI = Spinal cord injury

CN and Brainstem Function

- Topic Introduction
- Cranial Nerve (CN) Assessment
- Special Patient Populations

Scales and Special Assessments

- Patient Introduction
- Glasgow Coma Scale (GCS)
- GCS: Eye Opening
- GCS: Motor Response
- GCS: Verbal Response
- GCS: Total Score
- Other Assessment Techniques

Vital Sign Alterations

- Topic Introduction
- Autonomic Nervous System (ANS)
- Cushing's Triad
- Neurologic Emergencies

ICP and Brain Herniation

Increased ICP

- Topic Introduction
- Monro-Kellie Hypothesis
- Causes
- Pathophysiology and Etiology
- Signs and Symptoms
- Effects

Herniation

- Patient Introduction
- Cranial Anatomy
- Brain Herniation
- Emergency Interventions

Death by Neurologic Criteria

- Patient Update
- Criteria
- Laws and Policies
- Testing **ICU Only**
- Communicating With Family **ICU Only**
- Organ Donation/Procurement

Diagnostic Testing

Specialized Diagnostic Tests

- Topic Introduction
- Electroencephalogram (EEG)
- Lumbar Puncture (LP)
- Electromyography (EMG) and Nerve Conduction Studies (NCSs)

Imaging Diagnostics

- Topic Introduction
- CT and CT Angiography (CTA)
- Magnetic Resonance Imaging (MRI)
- Transcranial Doppler (TCD)
- Cerebral Angiography and Endovascular Treatment

Lab Values

- Topic Introduction
- Sodium and Water Imbalances
- Serum and Urine Osmolality
- Additional Lab Testing
- Patient Monitoring of AEDs*

*AEDs = Antiepileptic Drugs

Neurologic Monitoring

ICP Monitoring

- Patient Introduction
- Noninvasive Monitoring
- Invasive Monitoring **ICU Only**
- System Components **ICU Only**
- Management During Insertion **ICU Only**
- Management Post-Insertion **ICU Only**

ICP Waveform Analysis **ICU Only**

- Topic Introduction
- ICP Waveform Analysis
- Trended Waveforms

Managing ICP

- Topic Introduction
- Family and Patient Education
- Independent Nursing Interventions
- Collaborative Interventions **ICU Only**
- Surgical Interventions **ICU Only**
- Additional Care Considerations

Other Monitoring **ICU Only**

- Topic Introduction
- Neuronal Supply and Demand
- Cerebral Perfusion Pressure (CPP)
- Brain Tissue Oxygen Monitor
- Other Measurement Devices

Cerebral Spinal Fluid (CSF) Devices

- Patient Introduction
- CSF Drainage
- Adjusting Drainage Amounts
- Patient Transport
- Assessing Drainage
- Troubleshooting the EVD
- Lumbar Drain

ECCO: Caring for Patients With Neurologic Disorders: Part 2

MODULE DESCRIPTION:

This module addresses neurologic disorders, including:

- Strokes
- Subarachnoid hemorrhage
- Traumatic brain and spinal cord injuries
- Seizures
- Selected central nervous system infections

Presenting signs, diagnosis and treatments are explored with an emphasis on patient care priorities and clinical decision-making.

Additional content on status epilepticus is included in the ICU module.

CE INFORMATION:

Up to 4.44 ICU/4.42 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.44 ICU/4.42 PCU contact hours.

NEURO PART 2 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Ischemic Stroke

Etiology of Ischemic Stroke

- Patient Introduction
- Etiology
- Risk Factors
- TIA
- Symptoms
- Treatment
- Clinical Presentation

Diagnosing Stroke

- Patient Update
- Imaging Techniques
- CT and MRI Perfusion
- Circulation Evaluation
- ECG, TTE and TEE

Immediate Management of Ischemic Stroke

- Patient Introduction
- Stroke Response Team
- Patient Care Priorities
- Hypotension
- Hypertension
- Patient Assessment
- Tests

Fibrinolytic Therapy for Ischemic Stroke

- Patient Update
- rtPA*
- Patient Care Priorities
- Complications
- Monitoring for Hemorrhagic Transformation
- Symptoms of Hemorrhages
- Management of Hemorrhages

*rtPA = Recombinant Tissue Plasminogen Activator

Additional Ischemic Stroke Treatments

- Topic Introduction
- Strategies
- Intra-arterial (IA) Fibrinolysis
- Combination Therapy
- Patient Management
- Patient Care

Hemorrhagic Stroke

Intracerebral Hemorrhage (ICH)

- Patient Introduction
- ICH
- Signs and Symptoms
- Focus of Care
- Patient Care Priorities
- Interventions **ICU Only**

Subarachnoid Hemorrhage

- Patient Introduction
- Pathophysiology
- Signs and Symptoms
- Severity Scoring System
- Patient Care Priorities
- Complications
- Patient Management

Patient Management for All Strokes

- Topic Introduction
- Patient Care Priorities
- Early Mobilization
- Complications
- Medications
- Treatment Goals
- Collaborative Care

Traumatic Brain and Spinal Cord Injuries

Traumatic Brain Injuries

- Patient Introduction
- Primary and Secondary Injuries
- Etiology
- Intracranial Hemorrhage
- Patient Care Priorities
- Interventions
- Topic Conclusion

Traumatic Spinal Cord Injuries

- Patient Introduction
- Etiology
- Priority Assessments
- Interventions
- Potential Complications
- Topic Conclusion

Other Pathological Conditions

Seizures

- Patient Introduction
- Seizures
- ILAE Classification System
- Seizure Activity Phases
- Status Epilepticus **ICU Only**
- Diagnostic Testing
- Treatments

Central Nervous System Infections

- Topic Introduction
- Encephalitis
- Meningitis
- Brain Abscess
- Nursing Intervention
- Patient Care

MODULE DESCRIPTION:

This module includes an overview of GI diagnostic testing and nutritional therapies, including enteral and parenteral nutrition. The learner will explore the diagnosis, management and potential complications of GI bleeding, pancreatitis and liver failure.

Measurement of intra-abdominal pressure and management of intra-abdominal hypertension are addressed in ICU-only content.

Optional content on "Endoscopic procedures, Lab studies, GI infections and CDiff" is available as a PDF resource.

CE INFORMATION:

Up to 4.66 ICU/4.33 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.66 ICU/4.33 PCU contact hours.

GASTROINTESTINAL — ASSIGNMENTS, TOPICS AND SUBTOPICS

Diagnostic Testing

Imaging Exams

- Topic Introduction
- CT Scan Preparation
- MRI Preparation
- Angiography

Other Diagnostic Procedures

- Topic Introduction
- Liver Biopsy

Acute GI Bleeding

Signs and Symptoms

- Patient Introduction
- Monitor the Patient
- Observable Signs
- Upper vs. Lower Bleeding
- Common Causes of Upper GI Bleeding

Patient Care Priorities

- Patient Assessment
- Hemodynamic Response to Hemorrhage
- Management Goals
- Patient Care Priorities
- Teamwork

Interventions

- Patient Update
- Interventions
- Sclerotherapy
- Banding
- Balloon Tamponade
- Signs of Complications

Monitoring Responses

- Patient Update
- Assessing Post-Intervention
- Anticipate Lab Findings
- Signs of Bleed Resolution

Liver Failure

Patient Presentation

- Patient Introduction
- Signs and Symptoms
- Causes
- Understanding Orders

Assessment

- Patient Assessment
- Patient Care Priorities
- Encephalopathy Grades
- Physical Signs of Liver Failure
- Indications of Overt Bleeding
- Patient Care Priorities
- Abnormal Lab Values

Monitoring Responses

- Patient Update
- Ammonia and Encephalopathy
- Ammonia and Neurotoxicity
- Cerebral Edema
- ICP Monitoring Controversy
- Medications and Liver Failure
- Treatment Goals

Ascites

- Patient Update
- Risk Factors for IAH* and Compartment Syndrome
- Assessing for Ascites
- Patient Care Priorities
- Paracentesis

*IAH = Intra-abdominal Hypertension

More Complications of Liver Failure

- Topic Introduction
- Infections and Sepsis
- Hypoglycemia
- Portal Hypertension
- Hepatopulmonary Syndrome (HPS)
- Position a Patient With HPS
- Hepatorenal Syndrome

Intra-abdominal Hypertension ICU Only

Screening for IAH ICU Only

- Patient Update
- Risk Factors
- Pathophysiology
- Systemic Effects
- Measuring Pressure
- Effects of Increased IAP*

*IAP = Intra-abdominal Pressure

Monitoring IAP ICU Only

- Topic Introduction
- Measuring IAP
- IAH/ACS* Definitions
- Monitoring for Trends
- IAH Grades

*ACS = Abdominal Compartment Syndrome

Managing IAH ICU Only

- Patient Update
- Managing Rising IAP
- Interventions to Decrease IAH
- Managing IAH

Managing Complications ICU Only

- Topic Introduction
- Monitoring for Complications
- Grade II IAH: Causes and Treatments

Acute Pancreatitis

Diagnosis and Treatment

- Patient Introduction
- Pain Management
- Etiology of Acute Pancreatitis
- Risk Factors
- Diagnostic Imaging Studies
- Lab Studies
- Treatment Priorities

Anticipating Complications

- Patient Update
- Trends to Monitor
- Risks Associated With ERCP
- Treatment

Managing Complications

- Patient Update
- Signs of Complications

Continued on next page ...

GASTROINTESTINAL — ASSIGNMENTS, TOPICS AND SUBTOPICS (CONT.)

Other Pathologies

Bowel Ischemia and Infarction

- Patient Introduction
- Risk Factors
- Pathophysiology
- Diagnostic Exams
- Treatment Interventions
- Post-Intervention
- Complications

Ileus and Obstructions

- Topic Introduction
- Ileus Pathophysiology and Etiology
- Obstruction Pathophysiology and Etiology
- Patient Care Priorities
- Surgical Intervention

Abdominal Trauma

- Topic Introduction
- Assessment
- Patient Care Priorities
- Types of Abdominal Trauma
- Diagnostic Tools
- Indications for Surgery
- Potential Complications

Nutritional Support

Assessing Nutrition Needs

- Patient Introduction
- Risk Factors
- Hypermetabolism
- Effects of Malnutrition
- Nutritional Evaluation
- Causes of Malnutrition
- Nutritional Interventions

Determining Nutrition Route

- Topic Introduction
- Comparing Nutrition Routes
- Indications for EN
- Benefits of EN
- Contraindications to EN

Enteral Nutrition: Delivery Devices

- Patient Update
- Types of EN Devices
- Avoiding Nutrition Delays

Enteral Feeding: Tube Placement

- Patient Update
- Verifying Proper Tube Placement
- Assessing Aspirated Fluid
- Evaluating EN Tolerance
- Managing Gastric Residual Volume (GRV)
- Advancing Nutrition Rate

Enteral Nutrition: Monitoring

- Patient Update
- Nutritional Interruptions
- Preventing Tube Occlusion
- Risks and Complications of EN

Enteral Nutrition: Diarrhea Risk

- Patient Update
- Causes of Diarrhea
- Preventing Tube Contamination

Parenteral Nutrition (PN)

- Patient Introduction
- Indications of PN
- Benefits of PN
- Types of PN
- Potential Complications
- Controlling Glucose
- PN Administration

ECCO: Caring for Patients With Renal Disorders: Part 1

MODULE DESCRIPTION:

This module provides an in-depth review of the following:

- Assessment tools for monitoring kidney function
- Nursing priorities for fluid and electrolyte disorders
- Scoring systems to differentiate acute kidney injury and chronic kidney disease
- Overview of types of renal replacement therapies (RRTs)
- Temporary vs. permanent access catheters used for dialysis

Each topic area explores measures to intervene for alterations and prevent complications.

CE INFORMATION:

Up to 4.24 ICU/PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.24 ICU/PCU contact hours.

RENAL PART 1 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Assessment

Testing and Monitoring

- Topic Introduction
- Lab Results
- Urinalysis
- Serum and Urine Osmolality

Other Diagnostic Tests

- Topic Introduction
- Types of Dysfunction
- Diagnostic Imaging

Fluid and Electrolytes

Fluid Deficit and Excess

- Topic Introduction
- Patient Findings
- Therapy
- Water Intoxication
- Fluid Volume Excess Therapy

Electrolyte Imbalances

- Topic Introduction
- Hypo/Hyponatremia
- Hyper/Hypokalemia
- Hypo/Hypercalcemia
- Hypophosphatemia
- Hypomagnesemia

Acute Kidney Injury (AKI)

Classifying AKI

- Patient Introduction
- RIFLE Criteria
- KDIGO Guidelines
- Signs and Symptoms

AKI and Acute Tubular Necrosis (ATN)

- Patient Update
- AKI Risk Factors
- Types of Renal Dysfunction
- Interventions
- Oliguric Phase
- Diuretic Phase
- Recovery Phase

Medication and Contrast-Induced AKI (CI-AKI)

- Topic Introduction
- Patient Introduction
- Nephrotoxic Medications
- Prevention/Intervention

Chronic Kidney Disease (CKD)

Chronic Kidney Disease

- Topic Introduction
- Disease Progression
- Patient Introduction
- Patient Care Priorities

Renal Replacement Therapy (RRT)

- Topic Introduction
- Indicators
- Patient Management

Peritoneal Dialysis

- Topic Introduction
- Patient Introduction
- Patient Care Priorities
- Lab Values

Hemodialysis (HD) and HD Access Sites

- Topic Introduction
- Patient Update
- Protocols
- Patient Care Priorities
- Arteriovenous Patient Care
- Post HD

MODULE DESCRIPTION:

This module provides an in-depth overview of principles of renal replacement therapy (RRT) for the patient experiencing continuous renal replacement therapy (CRRT).

Topics include:

- Evaluating CRRT orders based on patient condition
- Assessing and troubleshooting the CRRT circuit
- Calculating fluid removal rates
- Ensuring patient safety

Within each topic area, measures to intervene for alterations and prevent complications are explored.

CE INFORMATION:

Up to 2.83 ICU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 2.83 contact hours.

RENAL PART 2 — ASSIGNMENTS, TOPICS AND SUBTOPICS

Common Considerations in CRRT ICU Only

Principles of Renal Replacement Therapy ICU Only

- Topic Introduction
- Patient Considerations
- Continuous Renal Replacement Therapy (CRRT)

Transport Mechanisms in CRRT ICU Only

- Patient Update
- Dialysate Composition
- Dialysis Principles

Maintaining the Filter and the Circuit ICU Only

- Topic Introduction
- Fluid Replacement and Anticoagulation
- Intake and Output Fluids (Calculations for Net Fluid Removal)
- Patient Care Priorities (Dialysate/Replacement Solutions)
- Anticoagulants
- Complications

Types and Complications of CRRT ICU Only

Types of CRRT ICU Only

- Topic Introduction
- CRRT Procedures (SCUF, CVVH, CVVHD, CVVHDF)

Complications of CRRT ICU Only

- Topic Introduction
- Patient Update
- Clotting Interventions
- Patient Care Priorities
- Correcting Acidosis
- Collaborative Care
- Patient Management for Decompensation on CRRT

MODULE DESCRIPTION:

This module provides an in-depth overview of assessment, management, nursing priorities, and evaluation of patients with a variety of endocrine disorders.

Topics include:

- Assessing the endocrine system
- Managing diabetes and diabetic emergencies
- Managing patients with disorders of the pituitary and thyroid glands
- Information on patients with cerebral salt wasting
- Managing hyperglycemia in the critically ill patient with continuous insulin infusions

Each topic area explores assessment tools and diagnostics, measures to intervene for alterations and tips to prevent complications.

Optional content is available on assessing parathyroid and adrenal glands, managing parathyroid and adrenal disorders, and calculating total daily dose of insulin in a PDF resource.

CE INFORMATION:

Up to 4.73 ICU/PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 4.73 contact hours.

ENDOCRINE — ASSIGNMENTS, TOPICS AND SUBTOPICS

Endocrine System Assessment

Assessing Pancreatic Function

- Topic Introduction
- Patient Introduction
- Blood Glucose Testing
- Blood Glucose Values
- Ketones

Assessing Pituitary Functions

- Topic Introduction
- ADH
- Subjective and Objective Assessments
- ADH Effects on Osmolality
- Fluid Volume Status

Thyroid and Parathyroid Functions

- Topic Introduction
- Hypo- or Hyperthyroidism

Diabetes and Complications

Diabetes and Complications

- Patient Introduction
- Types of Diabetes
- Etiology
- Pathophysiology
- Therapeutic Interventions
- Maintaining Blood Glucose Levels
- Insulin Therapy

Hypoglycemia

- Patient Introduction
- Risks of Hypoglycemia
- Patient Assessment
- Treatment Protocols
- Patient Care Priorities
- Maintaining Blood Glucose Levels
- Monitoring

Diabetic Ketoacidosis (DKA)

- Patient Update
- Pathophysiology
- Signs and Symptoms
- Treatment Goals
- Management Priorities
- Electrolyte Management
- Normalizing Blood Glucose

Hyperglycemic Hyperosmolar State (HHS)

- Topic Introduction
- Patient Presentation
- Pathophysiology
- Clinical Monitoring
- Lab Values
- Management
- Differential Diagnosis

Pituitary and Non-Pituitary Disorders

Diabetes Insipidus (DI)

- Patient Introduction
- Assessments
- Pathophysiology
- Lab Values
- Patient Management
- Potential Complications
- Patient Education

Syndrome of Inappropriate Antidiuretic Hormone (SIADH)

- Patient Update
- Pathophysiology
- Etiologies
- Patient Care Priorities
- Patient Monitoring

Cerebral Salt Wasting (CSW)

- Topic Introduction
- Patient Presentation
- Signs and Symptoms
- Underlying Causes
- Etiology
- Management

Thyroid Disorders

Hyperthyroidism

- Topic Introduction
- Signs and Symptoms
- Thyroid Storm
- Treatment

Hypothyroidism

- Topic Introduction
- Myxedema Coma
- Identifying Myxedema Coma
- Myxedema Coma Interventions

Managing Hyperglycemia

Insulin Administration

- Patient Introduction
- Insulin Administration
- Treatment Considerations
- Insulin Sensitivity
- Insulin Resistance
- Patient Safety

Patients With Insulin Pumps

- Topic Introduction
- Pump Types
- Halting the Pump
- Minimize Hypoglycemia Risk
- Partnering With Patients

ECCO: Caring for Patients With Hematological Disorders

MODULE DESCRIPTION:

This module provides an in-depth overview of assessment, management, nursing priorities, interventions and evaluation for managing patients with a variety of hematologic and coagulation disorders.

Topics include:

- Laboratory evaluation for hematologic and coagulation disorders
- Nursing priorities and treatment options for managing patients with thrombocytopenia
- Heparin-induced thrombocytopenia (HIT)
- Disseminated intravascular coagulation (DIC)
- Anemia: blood loss and hemolytic
- Venous thromboembolism (VTE)
- Drug-induced coagulopathies
- Reversal agents for anticoagulants

Nursing priorities are addressed for patients receiving blood product transfusions and assessing for transfusion complications, including pulmonary edema, transfusion reaction, transfusion-related acute lung injury (TRALI) and transfusion-associated circulatory overload (TACO).

Each topic area explores assessment tools and diagnostics, measures to intervene for alterations and tips to prevent complications.

CE INFORMATION:

Up to 3.14 ICU/PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 3.14 contact hours.

HEMATOLOGICAL — ASSIGNMENTS, TOPICS AND SUBTOPICS

Diagnostic Testing

Hematologic Studies

- Topic Introduction
- Patient Introduction
- Complete Blood Count (CBC)
- H&H
- Common Errors
- Platelet Count
- Non-CBC Tests

Coagulation Studies

- Topic Introduction
- PT-INR and aPTT
- Lab Draws
- Considerations for Testing
- Additional Diagnostic Tests (FSP, D-Dimer, Anit-Xa, Fibrinogen, TEG)

Thrombocytopenias

Thrombocytopenia

- Topic Overview
- Pathophysiology
- Etiologies
- Treatment
- Transfusion Risks
- Transfusion Thresholds
- Response to Treatment

Heparin-Induced Thrombocytopenia (HIT)

- Patient Introduction
- Pathophysiology
- Risk Factors
- Signs and Symptoms
- Diagnostic Criteria
- Treatment

Disseminated Intravascular Coagulation (DIC)

- Patient Update
- Pathophysiology
- Risk Factors
- Diagnostic Tests
- Signs and Symptoms **ICU Only**
- Patient Care Priorities **ICU Only**
- Therapy for Bleeding **ICU Only**

Other Pathologic Conditions

Anemia

- Topic Introduction
- Compensatory Mechanisms
- Signs and Symptoms
- Types of Anemia
- Diagnostic Tests
- Treatment
- Response to Treatment

Venous Thromboembolism (VTE)

- Topic Introduction
- Risk Factors
- Treatment
- Anticoagulant Transition
- Contraindications

Drug-Induced Coagulopathies

- Topic Introduction
- Risk Factors
- Diagnostic Tests and Response to Treatment
- Anticoagulant Reversal Agents

Transfusions and Complications

Transfusion of Blood Products

- Patient Update
- Transfusion Indications
- Double-Check Procedure
- Transfusion Protocol
- Complications
- Response to Treatment

Complications of Transfusions

- Topic Introduction
- Complications
- Transfusion Reaction
- Pulmonary Edema & TACO*
- TRALI**

*TACO = Transfusion Associated Circulatory Overload

**TRALI = Transfusion Related Acute Lung Injury

MODULE DESCRIPTION:

This module provides an in-depth review of the following:

- Different types of shock (hypovolemic, cardiogenic, neurogenic and anaphylactic)
- SIRS-sepsis-septic shock continuum
- Multisystem organ dysfunction syndrome (MODS)
- Rhabdomyolysis
- Necrotizing fasciitis
- Behavioral issues in critical care, including alcohol withdrawal and substance abuse

Each topic area explores assessments, evidence-based interventions and strategies to prevent complications.

The assignment "Multisystem Organ Dysfunction Syndrome (MODS)" is available in the ICU module only.

CE INFORMATION:

Up to 5.37 ICU/3.69 PCU ANCC contact hours. CERP A.

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, Provider Number 0012. The American Association of Critical-Care Nurses is approved by the California State Board of Registered Nursing, Provider Number CEP1036 for 5.37 ICU/3.69 PCU contact hours.

MULTISYSTEM — ASSIGNMENTS, TOPICS AND SUBTOPICS

Shock

Shock Syndrome

- Patient Introduction
- Types of Shock
- Stages of Shock
- Patient Management

Hypovolemic Shock

- Patient Update
- Etiologies
- Hemorrhage Classification
- Diagnostic Indicators
- Corrective Actions

Cardiogenic Shock

- Patient Introduction
- Mortality Rate
- Underlying Causes
- Pathophysiology
- Diagnostics
- Treatment

Obstructive Shock

- Topic Introduction
- Common Causes
- Treatment

Neurogenic Shock

- Topic Introduction
- Sympathetic Tone Loss
- Causes
- Diagnosis
- Hemodynamic Status
- Treatment

Anaphylactic Shock

- Topic Introduction
- Pathophysiology
- Diagnostic Criteria
- Signs and Symptoms
- Treatment

SIRS, Sepsis and MODS*

SIRS, Sepsis, MODS Continuum

- Topic Introduction
- Continuum of Sepsis, Septic Shock and MODS
- Screening and Risk Assessment Tools

**MODS = Multisystem Organ Dysfunction Syndrome*

Sepsis Screening

- Patient Introduction
- Sepsis and Risk Assessment Screening
- Assess the Patient
- Evaluate the Screening Criteria
- Patients at Risk
- Hospital Protocols

Sepsis

- Patient Update
- Indicators of Organ Dysfunction
- Impaired Capillary Perfusion
- Pathophysiology
- 3-Hour Sepsis Bundle
- Trending
- 6-Hour Sepsis Bundle

International Evidence-based Treatment Bundles

- Topic Introduction
- Septic Shock
- Evidence-based Interventions
- Family Support and Goals of Care

MODS ICU Only

- Patient Update
- Populations at Risk
- Pathophysiology
- Evidence-based Interventions
- End-of-Life Decisions

Behavioral

Alcohol

- Patient Introduction
- Patient Screening
- Assessing for Alcohol Withdrawal
- Initial Management
- Treatment Management
- Monitor Patient Response
- Symptom-Triggered Therapy

Drug Overdose

- Topic Introduction
- Diagnostic Testing
- Drug Overdose Management
- Neurologic Depression
- Clearing Toxins
- Specific Drug Treatments
- Monitoring and Preventing Complications

Necrotizing Fasciitis and Rhabdomyolysis

Necrotizing Fasciitis

- Topic Introduction
- Etiology and Pathophysiology
- Signs and Symptoms
- Patient Profile
- Patient Assessment
- Immediate Priorities
- Psychosocial Support

Rhabdomyolysis

- Topic Introduction
- Pathophysiology
- Causes
- Signs and Symptoms
- Diagnostic Criteria
- Complications
- Interventions