



Cardiac-Vascular Nursing Exam Review

Presented by

Alex Klacman, PhD(c), MSN/Ed., RN-BC, CCRN

Alex currently works as the system education specialist for critical care for the Texas Health Resources healthcare system and as educator for the critical care and cardiac services at Texas Health Presbyterian Hospital Dallas. She is an experienced critical care nurse, having practiced at the bedside for eight years prior to moving into her role as educator. She was the first person globally to lead the implementation of the American Heart Association's innovative Resuscitation Quality Improvement (RQI®) program. Her interests include best practices in resuscitation education and innovation, care of critically ill cardiology patients and basic/advanced ECG interpretation.

In her spare time, Alex is an adjunct faculty member for Western Governors University, teaching prelicensure nursing students in the simulation laboratory. She has been a presenter at multiple local, state and national conferences. She has been a reviewer for AACN's Essentials of Critical Care Orientation (ECCO) modules related to pulmonary and cardiac disorders. Currently, Alex is a doctoral candidate at the University of Texas at Arlington, where she is interested in studying CPR quality in obese patients in cardiac arrest. She has also been honored as one of the Great 100 Nurses of Dallas-Fort Worth and as a winner of the D Magazine Excellence in Nursing Award.

11 Contact Hours | Course Length: 629 minutes

Program Description

This course is designed to prepare the participant for the ANCC Cardiac-Vascular Nursing Exam. This concentrated review will focus on the key aspects of caring for patients with cardiac and vascular disease across the spectrum of care. Included is a review of cardiac anatomy and physiology, risk factors and risk reduction strategies and professional aspects of caring for this patient population. Participants will also complete review questions to prepare them for the types of questions that will be on the exam, as well as test-taking strategies.

Program Learning Outcomes

This program prepares the learner to:

1. Demonstrate the requisite knowledge required in order to be successful on the ANCC Cardiac-Vascular Nursing Exam.

Topics Covered

1 Introduction to the Exam

18 minutes

Module Description

This module is designed to familiarize the participant with the American Nurses Credentialing Center (ANCC) Cardiac-Vascular Nursing Exam. Included in this module is a discussion on the requirements for taking the exam, how to apply and register for the exam, an overview of the exam content along with testable nursing actions and, finally, further resources to help participants study.

Module Learning Objectives

This module prepares the learner to:

1. Identify the requirements for applying to take the Cardiac-Vascular Nursing Exam.
2. Describe the four broad content areas of nursing actions tested on the exam.
3. Summarize the requisite knowledge tested on the exam.
4. Summarize the requisite skills tested on the exam.

2 Review of Cardiac Anatomy and Physiology & the Cardiac Conduction System and ECG Complex

67 minutes

Module Description

The foundation for understanding cardiovascular pathophysiology is an understanding of normal cardiac anatomy and physiology. This module is designed to familiarize the participant with the following topics:

- Normal cardiac anatomy and physiology
- Anatomy and physiology of the cardiac conduction system and the complex interplay between the conduction system and the autonomic nervous system
- The ECG complex and the meaning of each wave and interval, along with their normal values
- The QT interval, the causes of a prolonged QT interval and the nursing actions for patients with a prolonged QT interval
- The sympathetic and parasympathetic nervous system and their actions on the cardiovascular system
- Review of sympathetic drugs, including their uses and expected hemodynamic effects

Module Learning Objectives

This module prepares the learner to:

1. Explain how cardiac anatomy determines the functions of the human heart.
2. Describe the different parts of the cardiac conduction system and their normal functions.
3. Explain the meanings of the waves and the intervals of the ECG complex.
4. Explain the sympathetic and parasympathetic nervous systems and their impact on cardiovascular function.

3 The Cardiac-Vascular Patient Assessment

57 minutes

Module Description

Crucial to determining the presence and extent of cardiovascular disease is the patient assessment. This module is designed to familiarize the participant with the following topics:

- Components of the initial and ongoing patient history
- Subjective data collection and relevance to the cardiac-vascular patient
- Key components to the physical assessment of the cardiac-vascular patient
- Accurate blood pressure (BP) measurement and evaluation of BP numbers

Module Learning Objectives

This module prepares the learner to:

1. Identify the key components and relevance of the patient history.
2. Identify the key components and relevance of the subjective data collection.
3. Identify the key components and relevance of the physical assessment.
4. Identify how to properly obtain a BP.
5. Explain the importance of systolic blood pressure (SBP), diastolic blood pressure (DBP) and mean arterial pressure (MAP).

4 Cardiac-Vascular Disease Risk Factors

84 minutes

Module Description

The identification of risk factors that place patients at risk for cardiac-vascular disease is essential. Risk factor reduction is critical to slowing the progression of cardiac-vascular disease. Also important are the strategies employed by the cardiac-vascular registered nurse to help patients establish healthy behaviors when risk factors are present.

Module Learning Objectives

This module prepares the learner to:

1. Summarize the non-modifiable and modifiable risk factors that place patients at risk of cardiac and vascular disease.
2. Discuss the evidence-based strategies to assist smokers who are attempting to quit.
3. Define normal low-density lipoprotein (LDL), high-density lipoprotein (HDL) and total cholesterol levels, then identify the pharmacologic measures utilized to normalize cholesterol levels.
4. Summarize both the Joint National Committee (JNC) 7 and 2017 American College of Cardiology (ACC)/ American Heart Association (AHA) blood pressure (BP) levels and the non-pharmacologic and pharmacologic measures utilized to treat hypertension and hypertensive emergencies.
5. Identify the key components of Prochaska and DiClemente's Transtheoretical Change Model and how to use the model to help patients in reducing unhealthy behaviors.
6. Identify the key components to the Health Belief Model and how to use the model to help patients in reducing unhealthy behaviors.

5 Acute Arrhythmias

81 minutes

Module Description

One responsibility of the cardiac-vascular registered nurse is to intervene when patients have acute, life-threatening arrhythmias. This module is designed to familiarize the participant with specific heart blocks, atrial arrhythmias and supraventricular tachycardia, along with how to identify these rhythms. Treatment of acute arrhythmias will also be discussed.

Module Learning Objectives

This module prepares the learner to:

1. Identify the three classes of heart blocks (first degree, second degree types I and II and third degree), then identify the treatment and therapy options for each heart block.
2. Identify the atrial arrhythmias (atrial flutter and atrial fibrillation [AF]) and the treatment and therapy options for these arrhythmias.
3. Identify the key characteristics of atrioventricular node re-entry tachycardia (AVNRT) and its treatment and therapy options.
4. Summarize the Vaughan-Williams Classification of Antiarrhythmic Drugs and when each class of antiarrhythmic should be used.
5. Summarize the different antiarrhythmics used in the management of acute, life-threatening arrhythmias, including their pharmacologic properties, indications and contraindications.

6 Professional Aspects of Cardiac-Vascular Patient Care

43 minutes

Module Description

High-quality, evidence-based care of cardiac and vascular patients is critically important to improving outcomes for this patient population. Also important are the factors external to the patient that play a role in improving outcomes. In this module, the professional aspects of cardiac and vascular nursing practice will be discussed.

Module Learning Objectives

This module prepares the learner to:

1. Summarize the six standards of cardiac-vascular nursing practice and the 10 standards of professional performance important in the care of cardiac-vascular patients as delineated by the American Nursing Association (ANA) in its Scope and Standards of Cardiovascular Nursing Practice (2nd edition).
2. Discuss the seven core ethical principles that guide cardiac-vascular nursing practice.
3. Discuss the legal aspects of end-of-life care, including decision making, advanced directives and physician orders for life-sustaining treatment.
4. Describe the key principles of adult learning and the four different key learning styles as well as how to identify a patient's learning preferences.
5. Define health literacy, and describe the key features of health illiteracy, along with how to ensure that patients understand healthcare information.
6. Describe the key types of nursing research, the differences between research and evidence-based practice (EBP) and how to implement EBP to improve care for cardiac-vascular patients.

7 Acute Coronary Syndrome

103 minutes

Module Description

Coronary artery disease (CAD) occurs when risk factor reduction measures have failed and patients develop atherosclerotic plaques that limit blood flow to portions of the myocardium. In this module, the learner will be introduced to the spectrum of acute coronary syndrome (ACS), how to identify each ACS and the treatment and therapy options for these conditions along with the evidence-based care of patients after a myocardial infarction (MI).

Module Learning Objectives

This module prepares the learner to:

1. Summarize the pathological events that occur in the development of atherosclerosis.
2. Summarize features of the chest-pain assessments and how patients may differ in their presentations of ACS.
3. Summarize the key tests utilized in the detection of ACS, including biomarkers and ECG analysis.
4. Describe the conditions of unstable angina and non-ST-segment elevation myocardial infarction (NSTEMI) and how these conditions differ, along with the treatment and therapy options for each.
5. Describe the conditions of ST-segment elevation myocardial infarction (STEMI) and the treatment and therapy for this condition.
6. Describe the evidence-based care of patients experiencing STEMI and the long-term care of patients who have suffered a STEMI.

8 Heart Failure

78 minutes

Module Description

Heart failure (HF) is a complex, long-term pathologic condition that causes major morbidity and, ultimately, mortality. In this module, the participant will be introduced to the pathophysiological processes that lead to HF and the evidence-based treatment guidelines to treat and slow its progression.

Module Learning Objectives

This module prepares the learner to:

1. Describe the key differences between heart failure with reduced ejection fraction (HFrEF) and heart failure with preserved ejection fraction (HFpEF) and the conditions that lead to the development of these HF types.
2. Describe the tests used to determine the presence and degree of HF, including the ECG and biomarkers.
3. Describe the pathophysiological processes in the development of HF.
4. Describe the American College of Cardiology (ACC)/American Heart Association (AHA) stages of HF and the New York Heart Association's Functional Classification of HF.
5. Summarize the medical management of patients with each stage of HF.
6. Describe the management of the patient with acute decompensated heart failure (ADHF).

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9 Valvular Heart Disease

35 minutes

Module Description

Valvular heart disease is either congenital or acquired. Whatever the cause, disease of the cardiac valves causes structural and functional changes to the heart chambers. In this module, the participant will be introduced to aortic and mitral valve disease and the impact that each has on cardiac function. In addition, treatment and therapy options for aortic and mitral valve disease will be discussed.

Module Learning Objectives

This module prepares the learner to:

1. Describe the location for cardiac valve auscultation.
2. Summarize the abnormal heart sounds S₃ and S₄, and describe the key differences between them.
3. Describe valve stenosis and valve regurgitation and the differences between them, as well as changes these valve problems can cause the heart.
4. Describe the murmurs of aortic valve regurgitation and aortic valve stenosis.
5. Summarize the causes of and the pathophysiologic changes that occur to the heart with aortic valve stenosis and regurgitation.
6. Summarize the causes of and the pathophysiologic changes that occur to the heart with mitral valve stenosis and regurgitation.
7. Describe the medical and surgical management of patients with aortic and mitral valve disease.

10 Diseases of the Aorta

24 minutes

Module Description

Aortic disease is a common complication that occurs in patients with both cardiac and vascular disease. Patients with atherosclerosis or hypertension or who smoke or possess other cardiac-vascular disease risk factors are at a high risk for development of aortic disease. In this module, the participant will be introduced to the different diseases of the aorta and the treatment and therapy options for these conditions.

Module Learning Objectives

This module prepares the learner to:

1. Describe the anatomy of the aorta, including the aorta itself, aortic arch, descending aorta and abdominal aorta.
2. Summarize the pathophysiological changes, along with signs and symptoms that occur with an aortic aneurysm and the management options for patients with an aortic aneurysm.
3. Summarize the pathophysiological changes that occur with aortic dissection and the management of patients with aortic dissection.

Module Description

Peripheral vascular disease (PVD) is a leading cause of morbidity in patients with atherosclerotic cardiovascular disease. Similarly to the changes that occur with coronary artery disease (CAD), patients with PVD commonly develop functional limitations due to the pain that occurs with physical exertion. In this module, the participant will be introduced to the causes of, pathophysiology of and management of patients with peripheral arterial disease (PAD) and peripheral venous disease. In addition, the participant will also be introduced to treatment strategies for anticoagulation.

Module Learning Objectives

This module prepares the learner to:

1. Summarize the clinical spectrum of PAD and the management of patients with intermittent claudication, chronic limb ischemia and acute limb ischemia.
2. Summarize the causes of and the changes that occur in the distal extremities in patients with Raynaud's disease.
3. Summarize the causes of and the management of patients with peripheral venous disease, including the use of the Unna boot.
4. Compare and contrast antiplatelet medications and anticoagulants and when to use each agent.
5. Describe the different antiplatelet agents, including aspirin, the adenosine diphosphate (ADP) receptor antagonist and the glycoprotein IIb/IIIa inhibitors.
6. Describe the physiologic effects of parenteral administration of heparin and how to monitor heparin therapy and intervene in patients with adverse reactions, including heparin-induced thrombocytopenia (HIT).
7. Describe the physiologic effects of the direct thrombin inhibitors and how to monitor therapy and intervene with patients having complications related to direct thrombin inhibitors.
8. Describe the physiologic effects of the Factor Xa inhibitors and warfarin (Coumadin), along with how to monitor and intervene with patients having complications related to these medications.

Accreditation

RN/LPN/LVN/Other: 11 Contact Hours

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