



## Cardiovascular Disease

### Maintenance of Certification Examination Blueprint

#### **What Does the Examination Cover?**

The exam is designed to evaluate the extent of the candidate's knowledge and clinical judgment in the areas in which cardiologists should demonstrate a high level of competence. Expertise in the broad domain of cardiovascular disease and the diagnosis and treatment of both common and rare conditions that have important consequences for patients, will be assessed.

Exam content is consistent with a pre-established blueprint, or table of specifications. The blueprint is developed by the Subspecialty Board on Cardiovascular Disease and is reviewed and revised annually to ensure that it is current. In addition, practicing cardiologists, cardiovascular disease trainees, and training program directors are surveyed periodically to provide feedback on the blueprinting process. The blueprint is used as a guide in developing the exam.

The majority of questions (over 75 percent) are based on patient presentations occurring in settings that reflect current medical practice. Questions requiring simple recall of medical facts are in the minority; the majority of questions require integration of information from several sources, prioritization of alternatives, and/or utilization of clinical judgment in reaching a correct conclusion. Some questions require interpretation of pictorial material including electrocardiograms, intracardiac electrograms, hemodynamic recordings, chest radiographs, photomicrographs, and imaging studies such as coronary angiograms, echocardiograms, myocardial perfusion studies, magnetic resonance images, and intravascular ultrasound images.

Topics covered may include the following:

- Anatomy and pathology
- Preventive and rehabilitative cardiology
- Epidemiology and ethics
- Cardiovascular disease in women
- Geriatric cardiovascular disease
- Preoperative assessment for noncardiac surgery
- Postoperative cardiac care
- Critical care medicine, cardiovascular surgery, and general internal medicine as encountered in the practice of cardiology (including some general pediatrics with an emphasis on adolescent medicine)

The content areas covered and their relative proportions on the exam are as follows:

Medical Content Category	Relative Percentage
Arrhythmias	12.0
Coronary artery disease	12.5
Acute coronary syndromes/Acute myocardial infarction	12.0
Valvular disorders	12.0
Congenital disorders	7.0
Pericardial disease	3.0
Aorta/Peripheral vascular disease	9.0
Hypertension/Pulmonary disorders	7.0
Pharmacology	5.0
Congestive heart failure	13.0
Physiology/Biochemistry	6.0
Miscellaneous	1.5
Total	100%

## Content Outline of the Certification Examination

This content outline describes a *typical* Cardiovascular Disease Certification Examination; actual content on a specific examination may vary. Each medical content category from the examination blueprint is listed in boldface below, along with target blueprint percentage and total number of questions in the category. Within each category, the approximate distribution of questions in specified areas is also listed.

Medical Content Category (Relative Percentage)	Number of Questions
<b>Arrhythmias (12%)</b>	<b>22-24 as follows:</b>
Atrial fibrillation/Atrial flutter	3-6
Sudden cardiac death/Ventricular arrhythmias/Wide QRS complex tachycardias/ICD indications, malfunctions, and interactions	3-6
Paroxysmal supraventricular tachycardias/Wolff-Parkinson-White syndrome	2-4
Antiarrhythmic drug indications, interactions, and effects	2-4
Pacemaker indications, management, malfunctions, and interactions	2-3
Electrophysiologic testing/Noninvasive electrocardiographic testing	2-3
Syncope/Sinus node dysfunction/AV block/Bundle branch block	0-1
Miscellaneous arrhythmias, such as arrhythmias in pregnancy	0-2

<b>Coronary artery disease (12.5%)</b>	<b>20-23 as follows:</b>
Medical management, including ICU care and long-term management of stable and unstable angina, thrombotic conditions, and vasomotor function	2-4
Noninvasive testing, including ECG, stress echo, stress nuclear, stress MR, CT, EBCT	2-4
Revascularization, including periprocedural management (PCI, surgery)	4-6
Invasive testing (coronary angiography, left ventricular function)	1-3
Symptom recognition (normal function, stable angina, unstable angina) including age and sex differences	0-2
Primary and secondary prevention, including therapy and risk factor recognition and management (lipid abnormalities, metabolic syndrome, systemic hypertension, etc.)	1-3
Pre- and postoperative assessment and management of noncardiac surgery	1-3

Medical Content Category (Relative Percentage)	Number of Questions
<b>Acute coronary syndromes/Acute myocardial infarction (12%)</b>	<b>21-25 as follows:</b>
Reperfusion therapy, including thrombolysis, anticoagulation, and interventions	4-6
Complications, including arrhythmias, shock, and continued ischemia	4-7
Symptom recognition/diagnosis, including age and sex differences	2-5
Medical management (preadmission, inpatient, perisurgical, postdischarge), including monitoring and rehabilitation	2-4
Risk stratification, including noninvasive testing and differential demographic outcomes	1-3
Primary and secondary prevention specifically related to ACS/AMI	1-3

<b>Valvular disorders (12%)</b>	<b>21-23 as follows:</b>
Prostheses/Repair, including indications and short- and long-term management	4-7
Mitral	3-6
Aortic	3-6
Tricuspid/Pulmonary	1-2
Multivalve disease	0-2
Endocarditis	0-2
Miscellaneous	0-1

<b>Congenital disorders (7%)</b>	<b>11-13 as follows:</b>
Shunts, including atrial septal defect, ventricular septal defect, patent foramen ovale, Eisenmenger syndrome, and tetralogy of Fallot	3-7
Valvular defects, including Ebstein's anomaly, pulmonary valve stenosis, bicuspid aortic valve	2-3
Vascular defects, including coarctation of the aorta and transposition of the great vessels	0-2
Syndromes with cardiovascular implications, including Down, Holt-Oram, Noonan, Turner, Williams, etc.	0-2

<b>Pericardial disease (3%)</b>	<b>4-6 as follows:</b>
Pericardial effusion and tamponade	1-3
Acute pericarditis	0-1
Pericardial constriction and effusive-constrictive pericarditis	1-3
Miscellaneous, including congenital absence of pericardium, pericardial cysts, pericardial tumors, and metastatic disease	0-1

Medical Content Category (Relative Percentage)	Number of Questions
<b>Aorta/Peripheral vascular disease (9%)</b>	<b>14-16 as follows:</b>
Peripheral arterial occlusive disease, diagnosis and therapy (pharmacologic, interventional, surgical)	3-6
Aortic disorders, including dissection and aneurysm	3-6
Stroke, diagnosis and therapy (pharmacologic, interventional, surgical)	1-3
Vasculitis, including Buerger, Takayasu, giant cell arteritis, SLE, polyarteritis nodosa, and Kawasaki	0-2
Miscellaneous, including antiphospholipid antibody syndrome, idiopathic lymphedema, retroperitoneal bleeding, and venous disorders	0-3

<b>Hypertension/Pulmonary disorders (7%)</b>	<b>12-14 as follows:</b>
Primary and secondary causes of hypertension, diagnosis, treatment, complications	5-8
Pulmonary hypertension (primary and secondary), pulmonary embolism	1-3
Severe/malignant hypertension	1-3
Hypertension in pregnancy (eclampsia)	0-1
Sleep disorders	0-1

<b>Pharmacology (5%)</b>	<b>9-12 as follows:</b>
Drug indications	2-4
Adverse effects	3-5
Mechanisms of action	1-2
Drug interactions	1-4
Pharmacokinetics	0-1
Alternative medicines/Dietary supplements	0-1

<b>Congestive heart failure (13%)</b>	<b>22-26 as follows:</b>
Cardiomyopathy, including dilated, hypertrophic, infiltrative, and restrictive	5-8
Systolic dysfunction, including diagnosis, therapy, and natural history	4-7
Diastolic dysfunction, including diagnosis, therapy, and natural history	1-2
Unstable heart failure (acute, decompensated)	1-2
Devices and surgical approaches	1-3
Transplantation	1-3
Diagnostic tests	1-3
Miscellaneous, including physiology, basic mechanisms (molecular, cellular, biochemical), comorbid factors, and complications	0-2

Medical Content Category (Relative Percentage)	Number of Questions
<b>Physiology/Biochemistry (6%)</b>	<b>10-11 as follows:</b>
Vascular physiology	1-4
Myocardial physiology	2-5
Metabolic/Molecular/Genetic	0-2
Other	1-2

<b>Miscellaneous (1.5%)</b>	<b>2-3 as follows:</b>
Study design/Literature interpretation	0-2
Ethics/Malpractice	0-2