AAPC

CCC®

Certified Cardiology Coder

STUDY GUIDE

2026

2026

Specialty Study Guide: CCC®

CARDIOLOGY

AAPC

Contents

2026 Specialty Study Guide: CCC® Introduction

The *Specialty Study Guide: CCC®* is designed to help cardiology coders, billers, and other medical office professionals prepare for the CCC® examination. This guide is by no means comprehensive. Your primary resource for the examination will be your years of hands-on experience in coding for cardiology services.

Healthcare in the 21st century is complex and requires expertise in proper coding to obtain payment for procedures, services, equipment, and supplies. Becoming a CCC® shows your expertise in cardiology coding. Membership in AAPC lends integrity to your credentials, provides a large network of coders for support, and allows you access to continuing education opportunities. The *Specialty Study Guide: CCC®* is designed to provide an overall review of coding and compliance information for the more experienced coder and for someone preparing for the CCC® examination.

We will review the importance of using the coding guidelines within ICD-10-CM and CPT® and emphasize the importance of correct evaluation and management (E/M) leveling. You will need the 2026 versions of ICD-10-CM, CPT®, and HCPCS Level II code books. These are the code books you will need for your CCC® examination, as well.

ICD-10-CM Coding

Proper diagnostic coding not only reports the medical necessity of procedures performed but also contributes to data that determine health policies for tomorrow. Because physicians have traditionally been paid by CPT® code values, coders have sometimes given little importance to correct diagnosis coding. Regulatory trends show that diagnoses will play a larger role in future reimbursement. It is important to code correctly now, so that you can be prepared for that day.

We will discuss the major topics of diagnosis coding for cardiology. The examinee must become familiar with the Official Coding Guidelines for ICD-10-CM. The examinee must know how to select the appropriate ICD-10-CM codes as well as the proper sequencing of diagnosis codes when more than one diagnosis code is required to report a patient's condition(s). This year's guidelines can be found at https://www.cms.gov/files/document/fy-2026-icd-10-cm-coding-guidelines.pdf. The examinee must understand the conventions, general coding guidelines, and chapter-specific guidelines in the ICD-10-CM code book.

Evaluation and Management Coding

Office visits consume a lion's share of the physician's time in most practices and represent the largest revenue source. Compliance is an increasing concern at practices, and the E/M material will focus on the E/M services for cardiology and underscore the importance of modifier use. An understanding of the AMA E/M guidelines and subsection notes is an important foundation for accurate code selection that is provided in your CPT® code book.

An online E/M calculator is provided for the online exam (https://www.aapc.com/codes/em-calculator) and your CPT® code book provides a Medical Decision Making (MDM) table to level an E/M service.

CPT® Coding

Surgical procedures specific to cardiology will be discussed in this section. Special attention will be given to the guidelines and parenthetical phrases associated with procedures. Understanding CPT® coding conventions will be helpful as well. The examinee must be able to select the appropriate CPT® codes and sequence the codes correctly when multiple procedures are performed. CPT® codes are sequenced based on the most complex or labor-intensive procedures. The codes with the highest relative value units are sequenced first.

Top 10 Missed Coding Concepts

We will review the Top 10 Missed Coding Concepts for the CCC® certification examination. The list is not presented in any specific order. The information is determined after an evaluation by the AAPC examination department of the commonly missed questions on the examination.

Practice Exam

The practice examination and the examination itself were written by coders with extensive experience in coding for cardiology. The practice examination mimics the format and structure of the CCC® certification examination.

AAPC has developed specialty credentials to enable coders to demonstrate superior levels of expertise in their respective specialty disciplines. Here is information on the CCC® credential:

- CCC® stands alone as a certification with no prerequisite that the examinee holds a CPC® or COC® credential.
- Examinations aptly measure preparedness for real-world coding by being entirely operative/patient-note based. These operative (op) notes are redacted op notes from real cardiology practices.

The CCC® examination tests your knowledge of coding concepts, anatomic principles, and coding guidelines only. When you sit for this examination, remember that individual payer rules are not a consideration when choosing the right answer. Unless it is specifically stated in the case note or examination question that the patient is covered by Medicare, you should follow the CPT® coding guidelines.

The exam tests competency. The candidate most qualified to pass the examination will be proficient in understanding the following:

- Medical terminology and anatomy
- Medical physiology
- Teaching physician guidelines
- Incident-to guidelines
- Split/Shared services
- HIPAA regulations
- Proper use of an Advance Beneficiary Notice (ABN)
- ICD-10-CM coding
- E/M code selection using the AMA CPT® E/M guidelines
- CPT® coding for common procedures
  - 30000 Series
  - Laboratory and Pathology
  - Radiology
  - Medicine
  - Category III codes
- CPT® and HCPCS Level II modifier usage
- HCPCS Level II coding

Familiarity with practical coding and the coding books is essential, because time is an important element in successfully completing the examination. Approach the exam as you would approach your work—by demonstrating coding abilities essential to success. This is not a general aptitude test, and each question has a specific goal for measuring your competency. The practice examination within the *Specialty Study Guide: CCC®* course is highly representative of the subject matter and level of difficulty you will encounter in the full-length examination.

Test Answers and Rationales

The final chapter in the book contains the answers to the practice examination. Accompanying each answer is a rationale that explains the coding guidelines contributing to selecting the right answer. These rationales should help you understand what is needed to successfully approach and answer questions on the real examination, because they allow you a glimpse into the minds of the test's creators.

Examinees passing the CCC® certification examinations will receive recognition in AAPC's monthly magazine, *Healthcare Business Monthly,* and receive a diploma suitable for framing.

About AAPC

AAPC was founded in 1988 in an effort to elevate the standards of medical coding by providing training, certification, ongoing education, networking, and recognition.

AAPC provides medical coding certification exams for coders in physician practices and the outpatient/facility environment. AAPC has expanded beyond outpatient coding to include training and credentials in documentation and coding audits, inpatient hospital/facility coding, regulatory compliance, and physician practice management. The purpose of AAPC coding certifications is to test an examinee's knowledge of coding principles and proficiency in coding accurately and efficiently. AAPC examinations measure a coder's skill of both coding accuracy and efficiency.

AAPC Member Code of Ethics

Members of AAPC shall be dedicated to providing the highest standard of professional service for the betterment of healthcare to employers, clients, vendors, and patients. Professional and personal behavior of AAPC members must be exemplary.

It shall be the responsibility of every AAPC member, as a condition of continued membership, to conduct themselves in all professional activities in a manner consistent with ALL of the following ethical principles of professional conduct:

- Integrity
- Respect
- Commitment
- Competence
- Fairness
- Responsibility

Adherence to these ethical standards assists in assuring public confidence in the integrity and professionalism of AAPC members. Failure to conform professional conduct to these ethical standards, as determined by AAPC's Ethics Committee, may result in the loss of membership with AAPC.

Evaluation and Management Coding for Certified CCC® Coders

This chapter examines the documentation requirements for the evaluation and management (E/M) codes used by physicians and non-physician practitioners (NPPs) to bill for their services.

The E/M documentation requirements chapter is designed to provide a detailed approach to the accurate identification of documentation elements as they are defined by the American Medical Association (AMA) Guidelines for E/M services. The goal of this material is to offer the necessary insight to develop proficiency and correct technique to accurately select levels of E/M services for the exam. This material is not meant to influence policy, rather to refer to as coding guidelines for the CCC® exam.

This chapter should be reviewed with the CPT® guidelines for E/M services found in the current CPT® code book. This guide is a general summary that explains commonly accepted aspects of selecting E/M codes. The goal is that, after completing your training, you will be confident that you will not under or over code a visit.

An Introduction to the Documentation Requirements Associated with E/M Services

The E/M Documentation Guidelines (DGs) have perhaps inspired more discussion than any other non-clinical topic based in the industry. In an ever-increasing effort to ensure that correct payments are made for visits and consultations, Medicare and the AMA have been working together for well over a decade. In 1992, Medicare transitioned to the Resource-Based Relative Value Scale (RBRVS) physician payment system and the AMA introduced E/M codes in CPT® to report visits and consultations.

By 1994, in response to confusion and the inaccurate interpretation of the codes, the Office of Management and Budget mandated that Medicare adopt DGs to expand the definition that was, at that time, only provided by CPT®. Medicare and the AMA jointly developed this initial set of E/M DGs which were deployed in 1995 and became known as the 1995 Documentation Guidelines or DGs. As auditing showed a pattern of continued misuse of the E/M Codes, the 1995 DGs were criticized as unfair to specialists because they seem to account for extended single system examinations with as much weight as limited multiple system exams.

Within two years, the E/M DGs were revised to improve physician and provider understanding and payment accuracy by extending the definitions to include specialty specific guidance. This set of DGs was scheduled to replace the 1995 DGs and became known as the 1997 DGs. The only problem was that the physician community loudly objected to the 1997 DGs. They were criticized as burdensome with documentation requirements that were too detailed and very difficult to achieve. Medicare decided to not replace the 1995 DGs but to instead allow physicians and providers to choose between the 1995 and the 1997 DGs.

In 2021, in an attempt to simplify the guidelines, the AMA changed the descriptions of the Office or Other Outpatient E/M Services codes 99202-99215. In addition, guidelines for the use of these codes were printed in the CPT® code book. The guidelines added in the 2021 CPT® code book were specific to Office or Other Outpatient E/M Services. In 2023, the AMA expanded the use of the guidelines introduced in 2021 to other E/M categories, eliminating the need for the 1995 and 1997 DGs.

Documentation Guidelines

There are three general principles regarding documentation to ensure credit can be thoroughly verified. It is important to follow these rules of thumb:

1. Documentation should be legible to someone other than the documenting physician or provider and their staff.
2. The date of service, name of the patient, and the name of the provider of service should be easily demonstrated by the documentation.
3. The documentation should support the nature of the visit and the medical necessity of the services rendered.

For most E/M visits, the provider performs three main components: history, exam, and medical decision making (MDM). The history directs the provider to troubleshoot the chief complaint based on an interview with the patient. The exam portion is the provider's physical exam and evaluation of the patient. The MDM includes the provider's assessment and plan.

The guidelines for E/M Services, along with the code descriptors, indicate that a "medically appropriate history and/or physical examination, when performed" is included in the service. While the history and exam should be documented, they are not used in the determination of the level of the code.

The guidelines also include pertinent definitions for terms necessary to understand when determining the level of MDM. You should read through the definitions provided in your CPT®

code book and refer back to them as we go through the MDM components below.

The E/M guidelines provide instructions for selecting the appropriate level of service based on either of the following:

1. The level of the MDM as defined for each service; or
2. The total time for E/M services performed on the date of the encounter.

The provider can determine to support the E/M level of the visit based on MDM or time on a case-by-case basis. Regardless of which element is used to determine the level of visit, documentation should support the medical necessity of the visit. Payers may also have regulations on when MDM or total time is used.

Determining the Medical Decision Making (MDM)

The MDM most accurately reflects the amount of work a provider performs during an E/M service. Four levels of MDM are recognized: straightforward, low, moderate, and high. The level of MDM directly correlates to a level of service.

EXAMPLE: OFFICE VISIT MDM TO CODE CORRELATION

New Patient Code	Established Patient Code	Level of MDM
	99211	N/A 99211 is reported for services that typically do not require the presence of a provider. As such, the concept of MDM does not apply to code 99211.
99202	99212	Straightforward
99203	99213	Low
99204	99214	Moderate
99205	99215	High

To adequately determine the level of visit, the MDM is selected based on three components:

1. The number and complexity of problems addressed at the encounter;
2. The amount and complexity of data to be reviewed and analyzed; and
3. The risk of complications and/or morbidity or mortality of patient management.

To determine the levels of these components appropriately, the definitions provided in your CPT® code book must be understood. Using a grid method, we will discuss each component. Be sure to refer back to the definitions listed in the E/M Guidelines as needed.

Number and Complexity of Problems

The number and complexity of problems identifies the nature of the presenting problem and is based on the relative difficulty level in making a diagnosis. For the problem to be considered in the number of problems, the problem must be addressed within that encounter.

Per CPT®, symptoms may cluster around a specific diagnosis and each symptom is not necessarily a unique condition. Comorbidities/underlying diseases, in and of themselves, are not considered in selecting a level of E/M services unless they are addressed, and their presence increases the amount and/or complexity of data to be reviewed and analyzed or the risk of complications and/or morbidity or mortality of patient management. The final diagnosis for a condition does not, itself, determine the complexity or risk, as extensive evaluation may be required to reach the conclusion that the signs or symptoms do not represent a highly morbid condition. Multiple problems of lower severity may, in aggregate, create higher risk due to interaction.

The final diagnosis alone does not determine the complexity or risk to the patient. The documentation should be reviewed for comorbidities or underlying diseases that are addressed that increase the level of risk to the patient. Simply listing a chronic illness in the documentation is not sufficient. The documentation should indicate that the provider addressed the conditions during the encounter or that the condition contributed to the severity of the case.

When a patient sees multiple providers for different aspects of their care, you may see a physician document the condition is being managed by another provider. When the documentation only states that the patient has the condition and that it is being treated by another provider, it is not considered for the leveling of the visit. If there is additional documentation showing assessment or care coordination regarding that diagnosis, other than the statement of the condition being treated by another provider, it is then considered toward the level of service.

TESTING TECHNIQUE

Read through the entire note to get an understanding of the conditions that are addressed and analyzed during the visit. Simply relying on the chief complaint will not always give an accurate description of the number and complexity of problems for the encounter.

There are four levels identified under the number and complexity of problems addressed; minimal, low, moderate, and high. As demonstrated by the table below, the level of Number/Complexity of Problems Addressed increases as the difficulty of the patient's health increases.

Objectives

This material will cover the pertinent issues specific to:

- Echocardiography
- Nuclear imaging
- Diagnostic heart catheterizations and coronary interventions
- Peripheral vascular angiography and interventions
- Electrophysiology
- Pacemaker and defibrillator-related services
- Phrenic nerve stimulation system

The focus will be on key coding and billing issues related to these services. These materials are not intended as a thorough overview of the terminology, anatomy and physiology, or the clinical nature of the procedures that are being performed.

Echocardiographic Study

A typical, comprehensive echocardiographic study includes three components. The first of these is the two-dimensional echocardiography (2D echo), and when performed, selected M-mode, which uses sound waves to create a grainy, 2D image of the heart walls and valves in motion. Using a transducer, sound waves are bounced off heart structures, captured on the rebound, and visually formatted for interpretation (size, shape, motion, and thicknesses of intra-thoracic structures).

The second component is a spectral Doppler study, which looks specifically at the movement of the individual blood cells throughout the patient's heart. The spectral Doppler study primarily assesses the speed and direction of blood flow. Intra-cardiac blood pressure also can be estimated using the data obtained during spectral Doppler study.

The third component of a comprehensive echocardiographic study is the color flow Doppler study, which effectively color-codes those blood cells assessed during the spectral Doppler study. This creates a graphic illustration of blood flowing through the different valves of the heart, so the physician can assess which valves are doing their job appropriately, and which are not.

Spectral Doppler and color flow Doppler may be separately billable services with some echocardiography services, when performed and documented. Because both procedures can assess valvular regurgitation (insufficiency), documentation should mention specifically "color flow" findings in addition to Doppler measurements.

Two-Dimensional Echocardiography

The two-dimensional (2D) echo may be either complete or limited.

CPT® defines a complete study as including the following:

- Left and right atrium and left and right ventricles
- Aortic, mitral, and tricuspid valves
- Pericardium and adjacent portions of aorta

Note: If all structures cannot be visualized/measured, the physician should document the reason(s) why and report a full study.

> 93307 Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, complete, without spectral or color Doppler echocardiography

A parenthetical note under 93307 instructs, "Do not report 93307 in conjunction with 93320, 93321, 93325."

A limited study "does not evaluate or document the attempt to evaluate all the structures that comprise the complete echocardiographic exam." That is, if all the components of a complete study are not documented (or the reason they are not documented is not explained), you should report a limited study.

> 93308 Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, follow-up or limited study

If performed, you may report a **limited** Doppler (93321) and color flow (93325) with a limited echo.

For all 2-D studies, the exam report should include interpretation of all information, documentation of clinically relevant findings (including quantitative measurements), and a description of recognized abnormalities. Under CPT® rules, "echocardiography not meeting these criteria is not separately reportable."

Similarly, "Use of ultrasound, without thorough evaluation of organ(s) or anatomic region, image documentation and final, written report," is not separately reportable with echocardiography, according to CPT®.

Doppler Studies

Like 2D echo, a spectral Doppler study can also be classified as limited or complete.

93320 Doppler echocardiography, pulsed wave, and/or continuous wave with spectral display (List separately in addition to codes for echocardiographic imaging); complete

93321 Doppler echocardiography, pulsed wave and/or continuous wave with spectral display (List separately in addition to codes for echocardiographic imaging); follow-up or limited study

"A complete Doppler study is one that examines every cardiac valve, and the atrial and ventricular septa for antegrade and/or retrograde flow," according to the Intersocietal Commission for the Accreditation of Echocardiography Laboratories (ICAEL). "In addition, a complete Doppler study provides functional hemodynamic data." Although this standard has not been incorporated officially into CPT®, it is a safe guideline to follow given the concurrence between the CPT® and ICAEL definitions of complete vs. limited 2D echo studies.

Color Flow

Color flow Doppler studies currently do not have a complete and a limited option. As long as the report clearly illustrates that the doctor performed color flow imaging, and the documentation outlines physician findings and interpretation, you may report 93325 *Doppler echocardiography color flow velocity mapping (List separately in addition to codes for echocardiography).*

Combined Complete Study (2D Echo, Doppler, and Color Flow)

CPT® describes all three components of a comprehensive echocardiographic study, 93306 *Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, complete, with spectral Doppler echocardiography, and with color flow Doppler echocardiography.* This code specifically includes the work associated with a complete 2D study (93307), a complete Doppler study (93320), and color flow study (93325). Rather than report the individual component codes to describe a comprehensive echocardiographic study, you must report 93306 alone.

Stress Tests

If both resting and stress images are obtained, report a cardiovascular stress test. Report 93015 for the global service performed in the office. This describes the full treadmill exercise test with the physician providing the supervision, interpretation and equipment or facility in which the test is performed. For office-based studies, the pharmaceutical used, when supplied by the office, may also be reported. It is also reported by the hospital facility for tracking purposes; however, the cost is included in the procedure.

In the hospital setting, you may not report 93015 because this includes the technical portion of the exam. For a stress test performed in the hospital, the physician will report instead *93016 Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; supervision only, without interpretation and report* and/or *93018 Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; interpretation and report only.* If exercise isn't possible, pharmaceutical stress can be achieved, but the reason must be documented (for example, patient experiences dizziness, has prosthetic limb, arthritis).

Stress Echo

93351 Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, during rest and cardiovascular stress test using treadmill, bicycle exercise, and/or pharmacologically induced stress, with interpretation and report; including performance of continuous electrocardiographic monitoring, with supervision by a physician or other qualified healthcare professional.

Similar to the compressive echocardiographic study with spectral Doppler and color flow, 93351 includes multiple services that would have been billed with separate CPT® codes in previous years.

Code 93351 includes the traditional stress echo, 93350 *Echocardiography, transthoracic, real-time with image documentation (2D), includes M-mode recording, when performed, during rest and cardiovascular stress test using treadmill, bicycle exercise and/or pharmacologically induced stress, with interpretation and report*, and 93015 *Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; with supervision, interpretation and report*.

In an office setting, where the physician is performing all of the work of the stress echoes and all of the work of treadmill exercise, you must report the combined code 93351 rather than separately reporting 93350 and 93015. Refer to the parenthetical note under code 93351.

Contrast Administration with Stress Echo

To report administration of contrast when performed with a stress echo: 93352 *Use of echocardiographic contrast agent during stress echocardiography (List separately in addition to code for primary procedure).* Report 93352 in addition to the

Top 10 Missed Coding Concepts on CCC® Examination

The concepts discussed are not in a particular order. The tips provided below are based on the AAPC exam department observations of the most missed coding concepts.

1. **Stents:** Codes for stent placement are reported per vessel, not per stent. If two stents are deployed in the same vessel, report the procedure only once. Catheter placement to access the vessel to deploy the stent is included in the stent code. Do not report catheter placement separately.
2. **Angioplasty:** Codes for angioplasty are reported per vessel, not per angioplasty. If angioplasty is performed on two separate sites of the same vessel, only report the procedure once. Catheter placement to access the vessel to perform angioplasty is included in the angioplasty code. Do not report catheter placement separately. Angioplasty is included when other interventions are performed in the same vessel (for example, stent placement, atherectomy).
3. **Femoral arteriogram:** Code the catheter insertion and radiology supervision and interpretation separately for this procedure. The radiology portion is reported with 75710 for a unilateral procedure or 75716 for a bilateral procedure. The catheter placement is reported with 36140. Nonselective catheter placement describes movement toward or into the aorta from any access point (for instance, catheter placement into the right lower extremity with advancement upstream into the aorta). Injections performed through the sheath are considered nonselective.
4. **Selective catheter placement of the carotid arteries:** These codes are reported on a hierarchy. If the provider performs selective catheter placement in the right internal carotid and right common carotid, only report the code (36224) for the internal carotid because it includes the service performed on the common carotid. If performed bilaterally, append modifier 50. Add-on codes are reported twice to indicate it was performed bilaterally. If the procedures are performed on different sides, internal carotid on the left and common carotid on the right, report 36224, 36223 or 36222 (depending on if intracranial or extracranial circulation is involved) with modifier 59.
5. **Split/Shared Visits:** A shared/split visit occurs when an NPP and physician are involved in the same patient case. Per CMS Shared/split visits do not apply in the office setting, only in a facility setting. If performed in the office setting, use incident-to requirements. In the facility setting, if the physician and NPP in the same group must perform a face-to-face encounter, and the service is billed by either physician or the NPP depending on which one performs the substantive portion (more than half) of the visit.
6. **Subsequent Hospital Care E/M codes:** If a patient is admitted by another physician (example, primary care physician) to the hospital and the cardiologist is the second doctor to see and examine the patient during the admission, you will report the initial visit with codes 99221-99223 for the cardiologist because each provider is of a different group and specialty/subspecialty.
7. **E/M Visits on the Same Day:** When the patient is admitted to the hospital as an inpatient or to observation status in the course of an encounter in another site of service (eg, hospital emergency department, office, nursing facility), the services in the initial site may be separately reported. Modifier 25 may be added to the other evaluation and management service to indicate a significant, separately identifiable service by the same physician or other qualified health care professional was performed on the same date.
8. **Read the entire operative report:** Do not rely only on the headers of the operative report. Sometimes, additional procedures are performed that are not listed in the header or the provider does not perform the procedure listed in the header.
9. **Reporting a New Patient E/M Service:** For determining whether a patient is **new** or **established**, CPT® defines *professional* services as face-to-face services provided by a physician or other qualified health care professional who is allowed to report E/M services.

   A new patient is one who has not received any professional (face-to-face) services from:

   - The physician or qualified health care professional
     - A patient was seen by Dr. Smith (a cardiologist) for chest pain two years ago. Today, the same patient returns to see Dr. Smith again for palpitations

   or

- Another physician or qualified health care professional of the same specialty and subspecialty within the same group practice within the past three years.

A patient was seen by Dr. Jones, a cardiologist, at ABC Medical Group one year ago. Today, the patient schedules an appointment with Dr. Brown, also cardiologist in the same practice.

10. **Consultation rules according to CPT® and CMS: Consultations, according to CPT® coding guidelines, require:** (1) A request by a physician or other qualified source; (2) That the service is to recommend care for a specific condition or problem, or to determine whether to accept responsibility for ongoing management of the patient's entire care or specific condition; and (3) A written report back to the requesting provider. If all three conditions are not met (for example, there is no documentation of a written report back to the referring provider), a consultation cannot be coded. CMS no longer reimburses consultations; you are directed to code office and outpatient codes or hospital care codes when the case note indicates it is a Medicare patient. Do not assume based on the patient's age that the patient is covered by Medicare. On the exam, if Medicare covers the patient, the information is provided in the case note or the question.

AAPC continuously evaluates and enhances our certification exams throughout the year. As AAPC continues to enhance the certification exams, we are beta testing the inclusion of a fill-in-the-blank item type on our certification exams. To prepare you for both item types (multiple choice and fill-in-the-blank), we have provided two versions of this practice exam. The same questions are on both versions of the Test Your Knowledge practice exam; however, the last three cases on this version of the practice exam are fill-in-the-blank. If you prefer to test using the multiple-choice item type for all the cases, use practice exam B.

The following questions will test your comprehension of the information covered in this study guide. The answer key is used for both versions of the Test Your Knowledge practice exams.

Version A

CASE 1

From a left common femoral access site, the catheter was advanced to the right common iliac artery for lower extremity angiography. This revealed several areas of stenosis in the right SFA, popliteal, and trifurcation area. Additional imaging was performed selectively from the distal popliteal artery; this revealed a subtotal occlusion of the ostial portion of the peroneal artery, 90 percent blockage of the anterior tibial, and 95 percent blockage of the posterior tibial. The catheter was pulled back, and a sheath shot was performed to assess the left lower extremity. This revealed relatively patent arteries from the sheath all the way to the trifurcation. Minimal luminal irregularities were noted in the trifurcation but nowhere near the extent that was found in the contralateral leg.

1. Which of the following catheter placement codes is supported by this report?

   A. 36140
   B. 35226
   C. 36245
   D. 36247

2. Which of the following imaging codes is supported by this report?

   A. 75625
   B. 75630
   C. 75710
   D. 75774

CASE 2

ECG gated CT of the heart without intravenous contrast was performed. Coronary calcium was evaluated; spiral scanning was performed using ECG dose modulation for coronary CT angiography after administering 1 dose of sublingual nitroglycerin. Average heart rate during the study was 62 BPM. Image postprocessing was performed on a separate workstation. Calcium score: Left main: 1.10; left anterior descending: zero; circumflex: 0.42; right coronary artery: 1.15.

CT Imaging

LEFT MAIN: Appears normal with only minimal atherosclerotic plaque. The left main arises normally and bifurcates into the LAD, ramus, and circumflex vessels.

LEFT ANTERIOR DESCENDING: Mild luminal irregularities are detected. No significant atherosclerotic obstructive plaque is detected. There is a dominant diagonal branch with mild luminal irregularities. The LAD in its distal portion appears small, and no visualized vessel is observed going to the left ventricular apex.

RAMUS INTERMEDIUS: A small- to moderate sized ramus intermedius with mild luminal irregularities without identified significant atherosclerotic plaque or stenosis.

CIRCUMFLEX/OBTUSE MARGINAL: Mild luminal irregularities. The first obtuse marginal is a small vessel, not well visualized. The second obtuse marginal is a moderate sized vessel without significant atherosclerotic plaque or stenosis detected.

RIGHT CORONARY ARTERY: The right coronary artery is the dominant vessel. Mild luminal irregularities are detected. No significant atherosclerotic plaque or stenosis. The PDA is a small to moderate sized vessel without significant atherosclerotic plaque or stenosis detected.

LEFT VENTRICULAR FUNCTION: Calculated ejection fraction of 60.8 percent. Left ventricular end-diastolic volume is 134 mL, end-systolic volume is 53 mL, and the stroke volume is 81.3 mL.

ADDITIONAL FINDINGS: All four pulmonary veins appear to arise normally from the left atrium. Pericardial thickness appears grossly normal.

Conclusions:

1) Total calcium score suggests that the patient is in the 25th to 50th percentile when compared to age and gender matched control group.

2) CT coronary angiogram demonstrates:

   a) Left main: Noncritical atherosclerotic build-up.

   b) LAD: Mild luminal irregularities with a dominant diagonal branch. Unable to visualize vessel at the left ventricular apex.

   c) Ramus intermedius: Small to moderate sized vessel. Mild luminal irregularities.

   d) Circumflex/obtuse marginal vessel: Mild luminal irregularities. No significant atherosclerotic plaque or stenosis.

   e) Right coronary artery: Dominant vessel. Mild luminal irregularities without significant atherosclerotic plaque or stenosis detected.

3) Ejection fraction calculated at 56 percent.

4) Additional sections included portions of the lungs, mediastinum, and chest wall negative. No significant incidental extracardiac findings.

3. Which of the following imaging codes is supported by this report?

   A. 75574
   B. 75571
   C. 75572
   D. 71275

After reviewing the answers and rationales, if you have further questions, please send them to: mct@aapc.com

CASE 1

From a left [1] common femoral access site, the catheter was advanced to the right common iliac artery for lower extremity angiography. This revealed several areas of stenosis in the right SFA, popliteal, and trifurcation area. Additional imaging [2] was performed selectively from the distal popliteal artery; [3] this revealed a subtotal occlusion of the ostial portion of the peroneal artery, 90 percent blockage of the anterior tibial, and 95 percent blockage of the posterior tibial. The catheter was pulled back and a sheath shot was performed to assess the left lower extremity. This revealed relatively patent arteries from the sheath all the way to the trifurcation. Minimal luminal irregularities were noted in the trifurcation but nowhere near the extent that was found in the contralateral leg.

[1] Catheter is inserted in lower extremity artery.

[2] Indication of an additional vessel studied after basic initial study.

[3] Vessel is a third order placement.

1. **Answer:** D. 36247

   Rationale: CPT® contains two sets of codes with each of the levels of selectivity: 36215–36217 (for vascular families that branch off of the aorta above the diaphragm) and 36245–36247 (for vascular families that branch off the aorta below the diaphragm). Following are abbreviated descriptions of these codes:

   Above the Diaphragm (subclavian, carotid, brachiocephalic, vertebral, etc.)

   - 36215—each first order branch within a vascular family
   - 36216—initial second order branch within a vascular family
   - 36217—initial third order or more selective within a vascular family
   - 36218—additional second order, third order, and beyond within a vascular family

   Below the (renal, iliac, femoral, popliteal, etc.)

   - 36245—each first order branch within a vascular family
   - 36246—initial second order branch within a vascular family
   - 36247—initial third order or more selective within a vascular family
   - 36248—additional second order, third order, and beyond within a vascular family

   Because this procedure took place exclusively below the diaphragm the codes described as “above the diaphragm” are not supported.

   The highest order selective position reached during this procedure was “third order” (i.e., the popliteal artery). See Vascular Families in Appendix L. Look under Abdominal Aorta, then First Order and find Common Iliac. You will see the popliteal artery, which was the final catheter position listed under Third Order below the diaphragm (dotted line). Report 36247.

2. **Answer:** D. 75774

Rationale: An add-on code toward the end of the angiography section of CPT® (75774) is frequently overlooked by coders and physicians. This code is appropriate to report when an additional selective study is performed within the same anatomic area of a complete diagnostic study that was reported with one of the other diagnostic angiography CPT® codes. According to its definition, this "additional vessel" study must be performed from a selective catheter position. 75774 *Angiography, selective, each additional vessel studied after basic examination, radiological supervision and interpretation (List separately in addition to code for primary procedure).* The case described in this question is a textbook perfect example of when code 75774 applies. The contralateral lower extremity was initially visualized from an injection in the common iliac artery. The catheter was then repositioned to the distal popliteal artery for an additional study. The other options listed are incorrect. Codes 75625 and 75630 each require diagnostic angiography of the abdominal aorta; since this was not mentioned, neither of these codes may be reported. Code 75710 is a unilateral lower extremity study. The fact that the doctor performed a lower extremity study with an injection in the contralateral lower extremity and another from the sheath, makes the extremity study a bilateral one; this should be reported with code 75716. Since the codes specific to extremity angiography are not differentiated as selective, non-selective, upper extremity, or lower extremity, these codes can be used to accurately report a number of different angiographic studies of the extremities:

- 75710 *Angiography, extremity, unilateral, radiological supervision and interpretation.*
- 75716 *Angiography, extremity, bilateral, radiological supervision and interpretation*. For example, a bilateral lower extremity study (75716) could be performed from one, non-selective contrast injection point at the lowest portion of the abdominal aorta (the aorto-iliac bifurcation) or from two injection points: one in each lower extremity. In this case, the latter of these scenarios applies.

CASE 2

ECG gated CT of the heart without intravenous contrast [1] was performed. Coronary calcium was evaluated; [2] spiral scanning was performed using ECG dose modulation for coronary CT angiography after administering 1 dose of sublingual nitroglycerin. Average heart rate during the study was 62 BPM. Image post processing was performed on a separate workstation. Calcium score: Left main: 1.10; left anterior descending: zero; circumflex: 0.42; right coronary artery: 1.15. [2]

CT Imaging

LEFT MAIN: Appears normal with only minimal atherosclerotic plaque. The left main arises normally and bifurcates into the LAD, ramus, and circumflex vessels.

LEFT ANTERIOR DESCENDING: Mild luminal irregularities are detected. No significant atherosclerotic obstructive plaque is detected. There is a dominant diagonal branch with mild luminal irregularities. The LAD in its distal portion appears small and no visualized vessel is observed going to the left ventricular apex.

RAMUS INTERMEDIUS: A small to moderate sized ramus intermedius with mild luminal irregularities without identified significant atherosclerotic plaque or stenosis.

CIRCUMFLEX/OBTUSE MARGINAL: Mild luminal irregularities. The first obtuse marginal is a small vessel, not well visualized. The second obtuse marginal is a moderate sized vessel without significant atherosclerotic plaque or stenosis detected.

RIGHT CORONARY ARTERY: The right coronary artery is the dominant vessel. Mild luminal irregularities are detected. No significant atherosclerotic plaque or stenosis. The PDA is a small to moderate sized vessel without significant atherosclerotic plaque or stenosis detected.

LEFT VENTRICULAR FUNCTION: Calculated ejection fraction of 60.8 percent. Left ventricular end-diastolic volume is 134 mL, end-systolic volume is 53 mL, and the stroke volume is 81.3 mL.

ADDITIONAL FINDINGS: All four pulmonary veins appear to arise normally from the left atrium. Pericardial thickness appears grossly normal.

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