

# Medicine



## Chapter Outline

Organization of the Medicine Section  
 Common Medicine Modifiers  
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 Psychiatry  
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 Gastroenterology  
 Ophthalmology  
 Special Otorhinolaryngologic Services  
 Cardiovascular Services  
 Pulmonary Services  
 Allergy and Clinical Immunology  
 Neurology  
 Chemotherapy Administration  
 Physical Medicine and Rehabilitation  
 Medical Nutrition Therapy, Acupuncture, and  
 Chiropractic Manipulative Treatment

Special Services, Procedures, and Reports  
 Summary  
 Testing Your Comprehension  
 Coding Practice I: Chapter Review Exercises  
 Coding Practice II: Medical Record Case Studies

## Chapter Objectives

- ▶ Describe the format of the CPT Medicine section.
- ▶ Recognize terminology used in the Medicine section.
- ▶ Correctly assign CPT codes and modifiers to medicine procedures and services.
- ▶ Recognize the elements required for complete injection and infusion CPT code assignment.
- ▶ Understand the various noninvasive and invasive cardiology procedures and correctly assign the applicable CPT Medicine codes.

*Services listed in the Medicine section represent a wide variety of diagnostic, therapeutic, and miscellaneous procedures and services for many different specialties. For example, injections and infusions of various substances commonly performed to prevent and treat many conditions are included in the Medicine section. Although rules set by individual payers will govern code selection for certain substances that are injected or infused, the procedure itself must be coded. In addition, the Medicine section contains specialty-specific codes such as those for psychiatry, ophthalmology, and otorhinolaryngology. Codes for services performed by health-care providers other than physicians (physical therapy, occupational therapy, and nutritional counseling) are also included in this section, as are codes for special services by physicians and other services that do not fit neatly into other CPT sections.*

### Word Parts and Meanings of Medical Terms Related to Medicine

Word Part	Meaning	Example	Definition
a-	without	aphakia	State of being without a lens
audi/o	hearing	audiometry	Measurement of hearing
chir/o	hand	chiropractic	Pertaining to use of the hands to treat
dia-	through, complete	dialysis	Complete separation such as when nitrogenous waste products in urine are removed from the bloodstream
encephal/o	brain	electroencephalogram	Record of electricity in the brain
nas/o	nose	nasopharyngoscopy	Visual examination of the nose and throat
ocul/o	eye	electro-oculography	Process of recording electrical signals of the eyes
somn/o	sleep	polysomnography	Process of recording many aspects of sleep
spir/o	breathing	spirometry	Measurement of breathing

## Organization of the Medicine Section

Within the CPT manual, the Medicine Guidelines and subsections contain specific notes on how to assign the codes. Coders should read the information carefully before code selection. As with all sections of CPT, it is recommended that the coder review all the choices available in the Medicine section to become familiar with its wide variety of services and codes. Table 8.1 shows the Medicine subsections and the code ranges that apply to each subsection.

## Common Medicine Modifiers

Modifier -25 is assigned for a separately identifiable evaluation and management (E/M) service by the same physician on the same day as the procedure. This modifier is needed if E/M services, such as a physical exam, are billed in addition to administration of a vaccine at an office visit. The modifier is appended to the E/M code, and all the key components required to justify the selection of the E/M code must be documented in the patient's medical record. A chiropractor or osteopathic physician would also need to use this modifier if an E/M code is submitted on the same date as manipulative treatment. The CPT codes provided for manipulative treatment include assessment of the patient before and after the treatment. Some third-party payers do not recognize modifier -25, so inclusion of the modifier will not guarantee reimbursement for the service(s). Documentation verifying that the patient's condition required additional services must be included in the medical record.

Modifier -50 is applied if a service described as unilateral is provided bilaterally. Codes located in the ophthalmology and otorhinolaryngology subsections may require this modifier. However, the coder should carefully look for terminology such as "unilateral or bilateral" or "both eyes" within the CPT code descriptions and in the medical record to verify the selected code correctly describes the procedure.

**TABLE 8.1** Medicine Subsections and Code Ranges

Medicine Subsection	Code Range
Immune globulins	90281–90399
Immunization administration for vaccines/toxoids	90465–90474
Vaccines, toxoids	90476–90749
Hydration, therapeutic, prophylactic, and diagnostic injections and infusions (excludes chemotherapy)	90760–90779
Psychiatry	90801–90899
Biofeedback	90901–90911
Dialysis	90918–90999
Gastroenterology	91000–91299
Ophthalmology	92002–92499
Special otorhinolaryngologic services	92502–92700
Cardiovascular	92950–93799
Noninvasive vascular diagnostic studies	93875–93990
Pulmonary	94002–94799
Allergy and clinical immunology	95004–95199
Endocrinology	95250–95251
Neurology and neuromuscular procedures	95805–96020
Medical genetics and genetic counseling services	94040
Central nervous system assessments/tests	96101–96125
Health and behavior assessment/intervention	96150–96155
Chemotherapy administration	96401–96549
Photodynamic therapy	96567–96571
Special dermatological procedures	96900–96999
Physical medicine and rehabilitation	97001–97799
Medical nutrition therapy	97802–97804
Acupuncture	97810–97814
Osteopathic manipulative treatment	98925–98929
Chiropractic manipulative treatment	98940–98943
Education and training for patient self-management	98960–98962
Non-face-to-face nonphysician services	98966–98969
Special services, procedures, and reports	99000–99091
Qualifying circumstances for anesthesia	99100–99140
Moderate (conscious) sedation	99143–99150
Other services and procedures	99170–99199
Home health procedures/services	99500–99602
Medication therapy management services	99605–99607

Modifier -52 is used if services provided are less than those described by the code. As mentioned above, many services in ophthalmology and otorhinolaryngology are performed bilaterally, so modifier -52 should be used if a procedure noted as bilateral is done on only one eye or one ear.

**TIP**

CPT specifically states that codes for hearing tests are bilateral procedures and that modifier -52 should be used if only one ear is tested.

Modifier -59 is appended if a distinct (separate) encounter occurs on the same day. This may be appended to drug administration codes if a distinct drug administration service was provided earlier in the same day and the codes have already been billed for those services. This modifier is not used if infusions are given in more than one site or if the infusion is stopped and then restarted.

### Quick Reference

HCPCS II/ CPT Modifier	Description	Explanation
25	Separately identifiable evaluation and management service by the same physician on the same day of the procedure or other service	Appended to the E/M code. Medical record must include documentation of all key components required to justify the selection of the E/M code and the patient's condition that required the additional services.
50	Bilateral procedure	Used if a procedure described as unilateral is provided bilaterally.
52	Reduced services	Used if services provided are less than the full code describes.
59	Distinct procedural service	Used if a distinct encounter occurs on the same day.

## Injections and Infusions

**Injection** is the process of introducing a fluid (such as a vaccine in liquid form) into the body's tissues using a needle. See Figure 8.1 for various angles used for injections. **Infusion** is the process of introducing a fluid other than blood (such as saline solution) into a vein. These methods are used for a wide range of medical treatments.

### Immune Globulins (90281–90399)

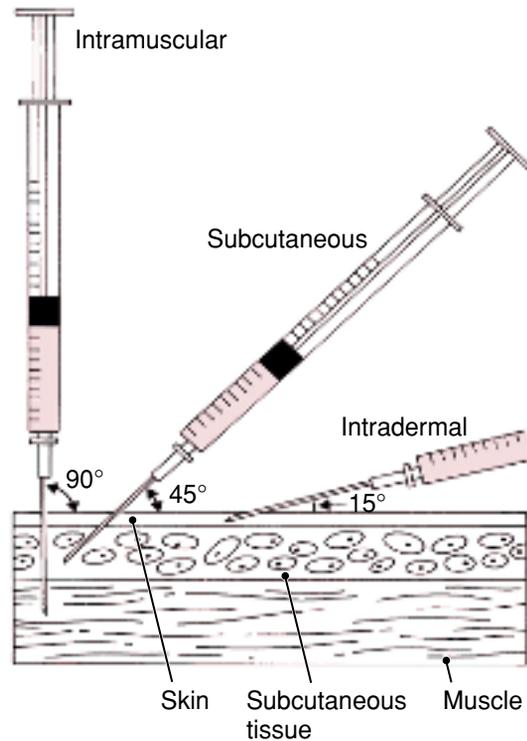
**Immune globulins** are substances produced from immunoglobulins in human blood. Immunoglobulins (antibodies) travel in the blood or lymph and provide protection against certain diseases. Immune globulin products are individually listed with the appropriate CPT codes. They may be administered by the following routes:

- ▶ Intramuscular (IM)—into a muscle
- ▶ Subcutaneous (SQ)—into subcutaneous tissue
- ▶ Intravenous (IV)—into a vein

The coder must assign a code from 90765 to 90779 for the specific administration route in addition to coding the specific immune globulin product (90281–90399).

### EXAMPLE

*Miscarriage of pregnancy at 10 weeks, requiring RhoGAM intramuscular administration (mini-dose): 90385, 90772.*



**FIGURE 8.1** ■ Angles of insertion of injections.

### Vaccines and Toxoids (90476–90749)

Immunity is acquired when the body produces antibodies in response to antigen exposure. Immunity can be acquired from having the active disease or receiving a vaccination. An antigen is a *foreign* substance that can attack the body and cause illness. Antigens may be bacteria, viruses, fungi, or other types of germs. Vaccines (viruses) and toxoids (bacteria) that are attenuated (weakened) can be injected in small amounts to enable the body to form antibodies, resulting in an immune (antigen/antibody) response. The immune response provides protection against the antigen if a subsequent exposure occurs.

Vaccination and toxoid administration codes are divided by route of administration, age of patient, and number of administrations. Routes include:

- ▶ Percutaneous—through the skin (absorption)
- ▶ Intradermal—into the skin
- ▶ Intramuscular—into a muscle
- ▶ Subcutaneous—into subcutaneous tissue (beneath the skin)
- ▶ Intranasal—into the nasal cavity
- ▶ Oral—into the mouth

Vaccination codes are specific for patients younger than 8 years of age and for age 8 and older. Add-on codes are provided for each additional administration. The coder should remember that *each additional* means the add-on code will be assigned for each additional injection or administration after the initial one.

#### TIP

Complete coding of vaccination and toxoid injection services requires that each injection or administration be coded separately. Two codes are required for each administration: one for the injection or administration procedure and one for the vaccine or toxoid product.

Coders should read the guidelines carefully to ensure the correct code choice. If the physician is present at the time of vaccine administration and provides face-to-face counseling to the patient and family, codes 90465 or 90467 are assigned along with applicable add-on code(s). If the physician is not present to provide counseling, the proper code selection is 90471 for the first injection and 90472 for each additional vaccine or toxoid administration. To separately code for E/M services at the time of immunization administration, the -25 modifier is appended to the E/M code. Physician office visits must meet the documentation requirements for key components (see details in the Evaluation and Management chapter of this textbook).



**Some payers may not recognize the use of modifier -25. The E/M services should be documented thoroughly in the medical record. However, E/M service provided on the same day as an injection or infusion may not be reimbursable.**

### Hydration (90760–90761)

Hydration codes are used for reporting intravenous (IV) administration of prepackaged fluid and electrolytes. These codes are not applicable to infusion of drugs or other substances and should not be reported if concurrently administered with chemotherapy or infusions of other drugs. Hydration is typically not a high-risk procedure, and once the IV line is in place, the patient requires little monitoring. Documentation of start and stop times is needed to allow the coder to choose the correct code(s). The codes are based on time, with 90760 for the initial hour and an add-on code of 90761 used for each additional hour.

Supply codes (substance/drug and amount administered) for injections and infusions are documented using a “J” code from HCPCS Level II, such as J7030 for infusion of normal saline solution, 1,000 mL. Some commercial payers do not accept the HCPCS Level II supply codes and will not reimburse for them. In this case, CPT provides a general supply code, 99070, that is submitted along with the name(s) of the product(s) used. To avoid repeating the code for a particular product (e.g., drug), the number of units can be reported in an additional field on the billing form/abstract.

#### EXAMPLE

*A dehydrated patient is infused with one unit of a 5% dextrose/normal saline solution, which takes approximately 50 minutes: 90760, J7042.*

*Alternatively, supply code 99070 can be used for the product administered if required by the payer (in place of J7042).*

### Therapeutic, Prophylactic, and Diagnostic Injections and Infusions (90765–90779)

Therapeutic, prophylactic, and diagnostic injections and infusions are used for various medicinal substances. These codes are *not* used for hydration or the administration of chemotherapy. Assignment of the codes describes the route of administration and length of time given, with one code for the first hour and an add-on code for each additional hour. The add-on code for 1 hour may be applied if the time is greater than 30 minutes beyond the 1-hour increment.

When administering multiple injections or infusions, the code for initial services is assigned just once unless a separate IV site is required for different

substances per protocol. Modifier -59 should be used with the second initial services code to indicate it is a distinct service. The initial service should be identified as the most significant or key service provided.

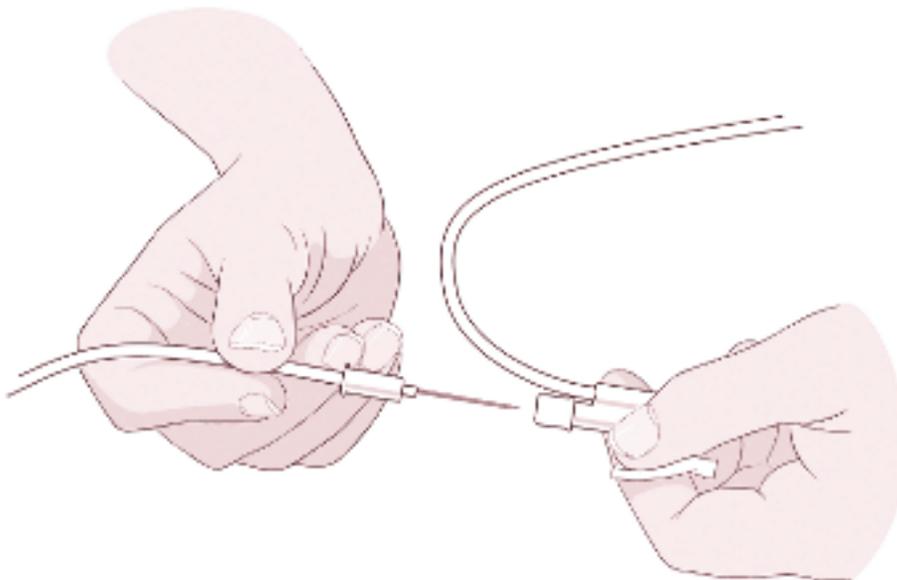
**TIP**

The initial hydration code of 90760 should not be used to report initial services if *any* other drug is administered. Even if hydration is listed as the first service received, the coder should report this service using 90761 with the drug administration code as the initial service.

The following services are included in the CPT codes for injections and infusions and are not reported separately:

- ▶ Local anesthesia
- ▶ Starting the IV
- ▶ Establishing access to the IV, catheter, or port
- ▶ Flushing of the line at the conclusion of the infusion
- ▶ Supplies
- ▶ Preparation of the substance(s) to be infused

**Concurrent infusions** in which multiple substances are administered simultaneously through one IV site can occur. The IV line receives additional fluids concurrently through one or more ports that are part of the IV tubing. For example, a patient is receiving fluids through an IV line. Based on the laboratory work, it is determined that this patient requires a second medication, such as potassium. A second bag of fluid containing potassium is hung on the IV pole, and the potassium IV line is connected to the port on the tubing of the original bag of fluids. This is commonly called **piggybacking** (see Fig. 8.2). Either infusion pump or gravity drip methods are typically used.



**FIGURE 8.2** ■ IV piggyback. Needle being inserted into secondary port of IV set.

**TIP**

Concurrent infusion codes are not intended for use with multiple medications contained in the same bag. To use concurrent infusion codes, the medications must be in separate bags.

A separate CPT add-on code is provided for concurrent infusions, and this should be reported only once per encounter. If a second encounter occurs on the same day and it is clearly documented in the medical record, the concurrent infusion code may be reported a second time with modifier -59 (distinct and separate service; same day) appended.

**EXAMPLE**

*Laboratory work for a patient receiving 2-hour IV Lasix returns and shows hypokalemia. Patient receives piggybacking of potassium with IV Lasix fluids: 90765, 90766, 90768. Report the following "J" codes from HCPCS Level II for the products administered: J1940, J3480. (Alternatively, supply code 99070 can be used for the products administered, if required by the payer.)*

CPT provides codes for **intravenous push** and **intra-arterial push**. A substance that is pushed is injected directly into an existing IV line that is in use. To use these push codes, the provider must be present for the administration of the substance, or the infusion must take less than 16 minutes to complete. If a push is given subsequent to starting a separate infusion, then the push is coded as subsequent, *not* as an initial service. If a total infusion lasts less than 16 minutes, the push code is assigned for the service. Push codes cannot be assigned for infusion services that do not meet the time requirements for add-on codes. For instance, if a patient receives an (initial) infusion for 1 hour 10 minutes, only the initial code of 90765 would be assigned. No add-on or push code can be assigned for the 10 minutes past 1 hour of services.

**EXAMPLE**

*Patient presents with severe vomiting and dehydration. IV infusion of normal saline, 1,000 mL for 2 hours. Phenergan IV push given. Report code 90774 for IV push, 90761, 90761 for administration of hydration (normal saline), and the following "J" codes from HCPCS Level II for the products administered: J2550, J7030. (Some payers do not recognize "J" codes, and then the supply code 99070 can be used for the products administered.)*

Note in the preceding example that 90760 is *not assigned* for the initial hydration services. Recall that the initial service does not necessarily mean the first treatment provided to the patient. Instead, the initial service describes the primary reason for the encounter. In this example, Phenergan is provided to stop the nausea and vomiting.

Coders must keep in mind the following key points for coding injections and infusions:

- ▶ Vaccine and toxoid administration services require two codes, one for administration and one for supply—both codes are found in the CPT manual.
- ▶ To report clearly separate E/M services with vaccine and toxoid administration codes, key components must be clearly documented and modifier -25 appended to the E/M code.

- ▶ Hydration codes for prepackaged fluids and electrolytes are based on the time of infusion. The initial code is for first hour, with an add-on code for each additional hour.
- ▶ Hydration codes are not reported if fluids are administered with chemotherapy or other drugs.
- ▶ Supply of infusion products for hydration codes is found in the “J” codes of HCPCS Level II or use 99070 for supply and specify product.
- ▶ Therapeutic, prophylactic, and diagnostic injections are based on route and time. Initial code is for first hour; add-on code for each additional hour.
- ▶ Initial service reported is for the most significant or key service provided, i.e., sequence first.
- ▶ Supply of injection products for therapeutic, prophylactic, and diagnostic injections is found in the “J” codes of HCPCS Level II. If the payer does not allow submission of “J” codes, use 99070 and specify the product(s).
- ▶ Sequential infusions or injections are those given after the initial infusion.
- ▶ Concurrent infusions must be in separate bags, through the same IV line.
- ▶ Push codes are assigned when a substance is injected directly into an existing IV line.
- ▶ Push codes require the presence of provider or an infusion requiring less than 16 minutes to complete.

The following examples are provided as further explanation of CPT administration codes only. Supply codes were intentionally omitted.

## EXAMPLES

*1—Pediatric patient presents to the emergency room with a kidney stone:  
 Started 12:10 ended 13:20 Normal saline bolus 1 liter IV: 90761  
 12:25 Toradol 30 mg IV push—note this is reported as the initial service: 90774  
 12:40 Zofran 4 mg IV push: 90775  
 13:05 Dilaudid 4 mg IV push: 90775  
 13:05 Benadryl 50 mg IV push: 90775  
 14:00 to 15:10 D5-1/2 NS with 20 meq KCl 150 mL/hr: 90761  
 16:25 to 16:55 Dilaudid 2 mg IV NOT CODED: Dilaudid was administered at 13:05, and the second infusion at 16:25 cannot also be reported.*

*2—Pediatric patient presents to the emergency room with bloody diarrhea:  
 03:40 Claforan 50 mg/kg IV: 90765  
 04:19 Ampicillin 30 mg/kg IV: 90766*

*3—Pediatric patient presents to the emergency room with testicular pain:  
 Started 21:55 ended 22:55 20 mg/kg bolus normal saline: 90761  
 22:22 4 mg morphine IV push—note this is reported as the initial service: 90774  
 23:34 2 mg morphine IV push NOT CODED: morphine was administered at 22:22 and cannot be reported a second or third time.  
 23:52 10 mg ketorolac IV push: 90775  
 00:40 2 mg morphine IV NOT CODED: morphine was administered at 22:22 and cannot be reported a second or third time.*

## Psychiatry (90801–90899)

Psychiatry is the medical specialty concerned with the diagnosis and treatment of mental disorders. Psychiatric codes are provided for inpatient and outpatient services. Psychiatric consultations may be requested by the

patient's primary care provider. This service requires a thorough review of the patient's history and a lengthy psychiatric examination. Results are then reported back to the requesting physician and a written report is completed. An appropriate code from the Evaluation and Management (E/M) section of CPT is assigned for this service.

Psychotherapy is the treatment of emotional, behavioral, personality, and psychiatric disorders based primarily on verbal or nonverbal communication and interventions with the patient. Medical E/M services for a health assessment and medication monitoring can be provided in conjunction with psychotherapy visits. These codes are used to report services by the psychiatrist, nurse practitioner, or physician assistant. Family practitioners, obstetricians, and other medical doctors may also assign these codes if a patient's visit is for psychotherapy or other psychiatric services. It is recommended that psychotherapy be provided either before or after the E/M services to ensure correct code selection for timing of psychotherapy services. Codes for individual psychotherapy are based on time spent face-to-face with the patient. Interactive psychotherapy is usually provided to children and includes play therapy and nonverbal communication. Psychotherapy services other than medical E/M services may be reported by psychologists, social workers, and counselors.

#### EXAMPLE

*Patient with depression presents to the psychiatric office for medication management and psychotherapy. Psychiatrist spends 10 minutes reviewing history and physical changes and response to new medication. Twenty minutes of face-to-face psychotherapy is then provided with the patient: 90805.*

Family psychotherapy may be provided with or without the patient present. In either case, the code selected is applied to the patient's record. If a child is seen alone, and then the parents are seen alone for information about the child's condition or treatment, the total time of the services may be added for a single psychotherapy visit code with the child.

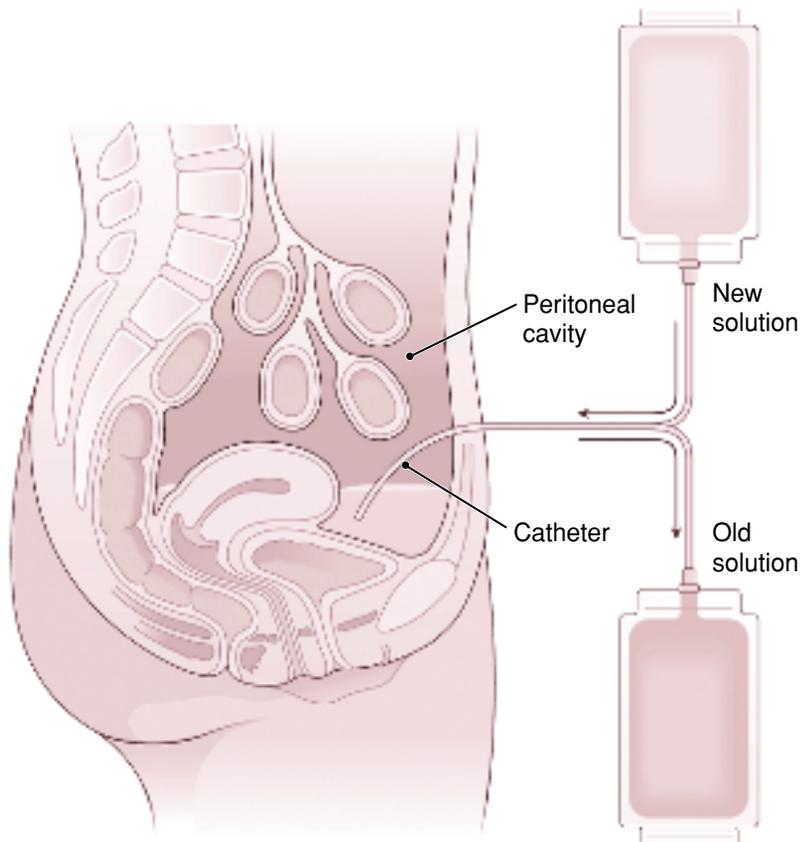
## Dialysis (90918–90999)

End-stage renal disease (ESRD) is also called chronic kidney disease (CKD). When a patient has stage 5 CKD, only 15% of kidney function remains. This is insufficient to adequately remove waste products of metabolism (nitrogenous wastes; urea) from the bloodstream, and **hemodialysis** is then necessary to cleanse the blood. The procedure is usually performed three to four times a week.

CPT provides codes for ESRD management in the outpatient setting based on one full month or per day of services. The codes are further delineated by patient age ranges of younger than 2 years, 2 to 11 years, 12 to 19 years, and older than 20 years of age. These codes include initiation of the dialysis cycle, care provided during dialysis visits, all E/M services provided at the time of dialysis, and telephone calls relating to this care. For patients younger than 20 years of age, the ESRD codes also include nutritional assessment and review, growth monitoring, and parental counseling and support. These ESRD management codes also include the actual hemodialysis procedure (i.e., don't code separately).

#### EXAMPLE

*A 12-year-old patient with chronic kidney disease receives 1 month of hemodialysis services on an outpatient basis: 90920.*



**FIGURE 8.3** ■ Peritoneal dialysis.

If an ESRD patient is admitted to the hospital, then appropriate inpatient care codes from the E/M section are submitted for the time of hospitalization. ESRD codes for services provided to inpatients if the physician is physically present during hemodialysis will include codes from 90935 to 90940. If the physician visits the patient at a time other than during hemodialysis, the appropriate E/M code would be assigned. For outpatient ESRD services of less than 1 month (where an inpatient stay occurred), ESRD per-day codes are applied.

Hemodialysis procedure codes 90935 and 90937 are also used for patients without ESRD for inpatient *and* outpatient settings (e.g., patient has reversible acute renal failure). If the patient receives peritoneal dialysis (see Fig. 8.3) or dialysis services other than hemodialysis, separate codes are provided in the 90945–90999 range. The coder should look carefully for documentation of repeated evaluations by the physician during the dialysis cycle for adjustments in the dialysis prescription. Codes are available for these repeated evaluations versus a single physician evaluation.

## Gastroenterology (91000–91299)

Gastroenterology is the medical specialty concerned with treating disorders of the gastrointestinal tract, including the esophagus, stomach, intestines, and associated organs.

Gastroesophageal reflux disease (GERD) causes stomach acid to flow back up (reflux) into the esophagus. GERD is often associated with hiatal hernia. The



## FOCUS ON MEDICAL NECESSITY

Test (CPT Code)	Possible Diagnosis	ICD-9-CM Code
Gastrointestinal tract imaging, intraluminal (e.g., capsule endoscopy), esophagus through ileum, with physician interpretation and report (91110)	Iron deficiency anemia secondary to blood loss (chronic)	280.0
	Iron deficiency anemia unspecified	280.9
	Regional enteritis of small intestine	555.0
	Regional enteritis of small intestine with large intestine	555.2
	Regional enteritis of unspecified site	555.9
	Diverticulosis of small intestine with hemorrhage	562.02
	Diverticulitis of small intestine with hemorrhage	562.03
	Angiodysplasia of intestine with hemorrhage	569.85
	Hemorrhage of gastrointestinal tract unspecified	578.9
	Gastrointestinal tract imaging, intraluminal (e.g., capsule endoscopy), esophagus, with physician interpretation and report (91111)	Portal hypertension AND one of the following:
(1) Esophageal varices in diseases classified elsewhere with bleeding, or		456.20
(2) Esophageal varices in diseases classified elsewhere without bleeding		456.21

presence of this acid changes the pH (acid-base balance) of the fluids in the esophagus and may cause esophagitis and tissue erosion over time. Tests to measure the pH levels in the esophagus are included in the gastroenterology subsection of CPT. In addition, motility studies for the esophagus, stomach, and duodenum are provided. These studies are called manometric studies and they measure movement.

### EXAMPLE

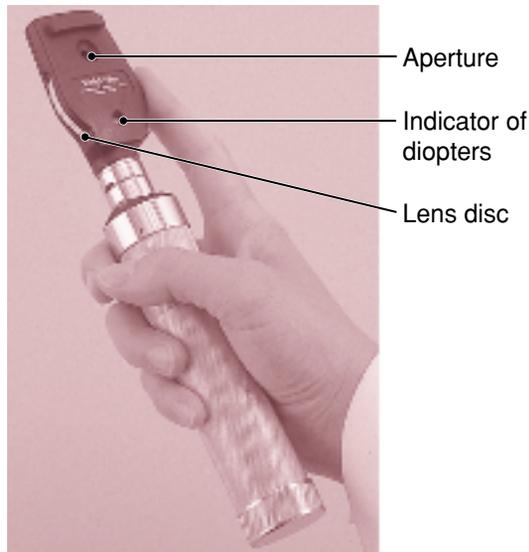
*Patient with gastroparesis receives electrogastrography, diagnostic, transcutaneous: 91132.*

Capsule endoscopy is a procedure in which the patient swallows a “camera pill,” and images captured by the camera are interpreted by the physician. Codes are reported for the esophagus only or for the esophagus through the ileum. The above Focus on Medical Necessity table provides ICD-9-CM codes for diagnoses related to the capsule endoscopy procedures. This is an example of a local coverage determination (LCD) for First Coast Service Options, Inc., of Florida, provided on the CMS Web site. All procedure codes in CPT require a diagnosis code to prove medical necessity. See Chapter 3 for further discussion of medical necessity.

## Ophthalmology (92002–92499)

Ophthalmology is the medical specialty concerned with the eye, its diseases, and refractive errors. Ophthalmologists and optometrists are “eye doctors” who assess refractive errors and treat disorders of the eye. Ophthalmologists are medical doctors (M.D.) trained to perform eye surgery in addition to providing medical care. CPT provides specific codes for services provided to new and established ophthalmologic patients. If the services provided are less than those described in codes 92002–92014, the coder should assign an appropriate code from the E/M section of CPT.

Routine ophthalmoscopy along with mydriasis (dilation of pupils) is considered part of either general or special services and is not coded separately



**FIGURE 8.4** ■ Ophthalmoscope. A device used to examine the interior of the eye through the pupil.

(see Fig. 8.4). Specific tests that are coded separately include fluorescein angiography to determine the blood supply to the retina (e.g., in diabetes) and tonometry to determine the pressure within the eye to test for glaucoma, for example. Glaucoma occurs when fluid (aqueous humor) within the eye is unable to drain properly, causing a buildup of pressure within the eye and eventual peripheral vision loss if untreated.

Visual field (VF) testing is performed to determine defects in the field of vision. Codes are assigned based on whether the testing is limited, intermediate, or extended. This is determined by the type of equipment and complexity of the studies. Drooping eyelids (blepharoptosis) often occur with aging. A surgical repair of the eyelid can be done; this procedure is called blepharoplasty and is usually not covered by health insurance or Medicare unless significant vision obstruction can be demonstrated. If VF testing is done to determine medical necessity for blepharoplasty, two tests may be run. In the first test, the patient's eyes are taped, and in the second test, the eyes are not taped to determine the degree of visual obstruction. A modifier -76 is required on the second test to explain the need for two VF tests on the same date by the same provider.

*Established patient with a family history of glaucoma receives provocative tests with interpretation and report, without tonography, as part of an intermediate level office visit: 92012, 92140.*

### EXAMPLE

Codes are provided for supply and fitting of contact lenses and fitting of glasses. A special type of contact lens is used for treatment of corneal pathology such as abrasions, ulcers, and dry eyes. The code is 92070 and this is assigned per eye treated. Spectacle services include prosthetic services for aphakia. Aphakia is absence of the lens of the eye, which is removed surgically, usually because of cataracts.

The coder should also be aware of two codes for visual acuity testing by technicians, done as part of a screening test: 99172 and 99173. These screening codes would only be used to report an ophthalmologist's services if they are performed as part of a school screening program.

## Special Otorhinolaryngologic Services (92502–92700)

Services listed in the special otorhinolaryngologic services subsection include a medical evaluation. Therefore, these services are not usually performed as part of a comprehensive office visit with an otorhinolaryngologist, whose practice involves diagnosis and treatment of diseases of the ear, nose, and throat (including the pharynx, larynx, tracheobronchial tree, and esophagus). Routine E/M services for otorhinolaryngology include procedures such as otoscopy, rhinoscopy, and hearing tests using whispered voice or tuning forks, and therefore are not coded separately. If calibrated electronic equipment is used to test hearing, CPT does provide codes for these services.

Auditory rehabilitation codes are included in this subsection and include testing for hearing loss and speech understanding. Codes for these services are based on time, with the first code accounting for 1 hour and the add-on code representing each additional 15 minutes spent with the patient. Services include obtaining a history, describing the procedures to the patient, assessing the patient, and making recommendations. As with all timed services, start and stop times are required to allow the coder to perform correct code selection. The clinician must go at least 8 minutes past the initial hour to assign the add-on code for 15 minutes of service time.

Auditory rehabilitation codes are also provided for patients with hearing loss before learning to speak. This is usually assigned to children with the assumption that a hearing aid or cochlear implant is not enough for the child to understand speech. Additional training is necessary to teach these patients how to process the auditory stimuli they are receiving with the new aids. A CPT code of 92633 is available if the patient loses hearing after learning speech, or postlingual.

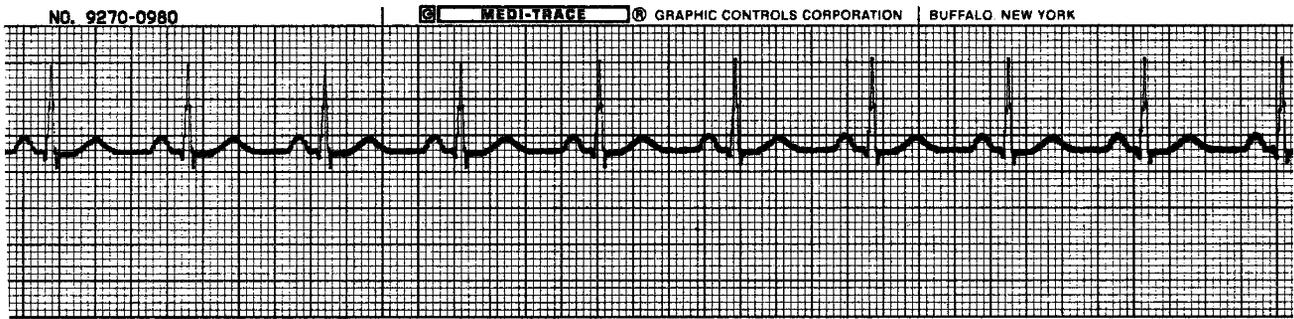
### EXAMPLE

*Level 2 follow-up office visit with otorhinolaryngologist, examination includes a tuning fork test: 99212.*

## Cardiovascular Services (92950–93990)

Electrocardiography provides a tracing record of the electrical activity in the heart (Fig. 8.5). If this service is provided in a physician's office, the coder should be aware of the code choices for the entire procedure, including interpretation and report; provision of a tracing only; or, provision of interpretation and report only. A Holter monitor is a portable device for providing 24-hour (or more) continuous tracings of heart's electrical activity. A Holter is used to detect transient or insidious arrhythmias that are not readily seen on routine (short) electrocardiogram tracings such as those done in the physician's office. Codes in the range of 93224–93237 are assigned based on the specific technology used for the monitor.

Echocardiography is ultrasound of the heart chambers and valves and the great vessels, including the aorta and venae cavae. The images may be two dimensional or Doppler. Complete studies provide information about the structure (as noted above) and function of the heart, including direction and velocity of blood flow, intracardiac pressures, stroke volume and cardiac output, valve



**FIGURE 8.5** ■ Normal sinus rhythm.

formation, and ventricular function during both systole and diastole. Limited studies provide a thorough evaluation of a limited area.

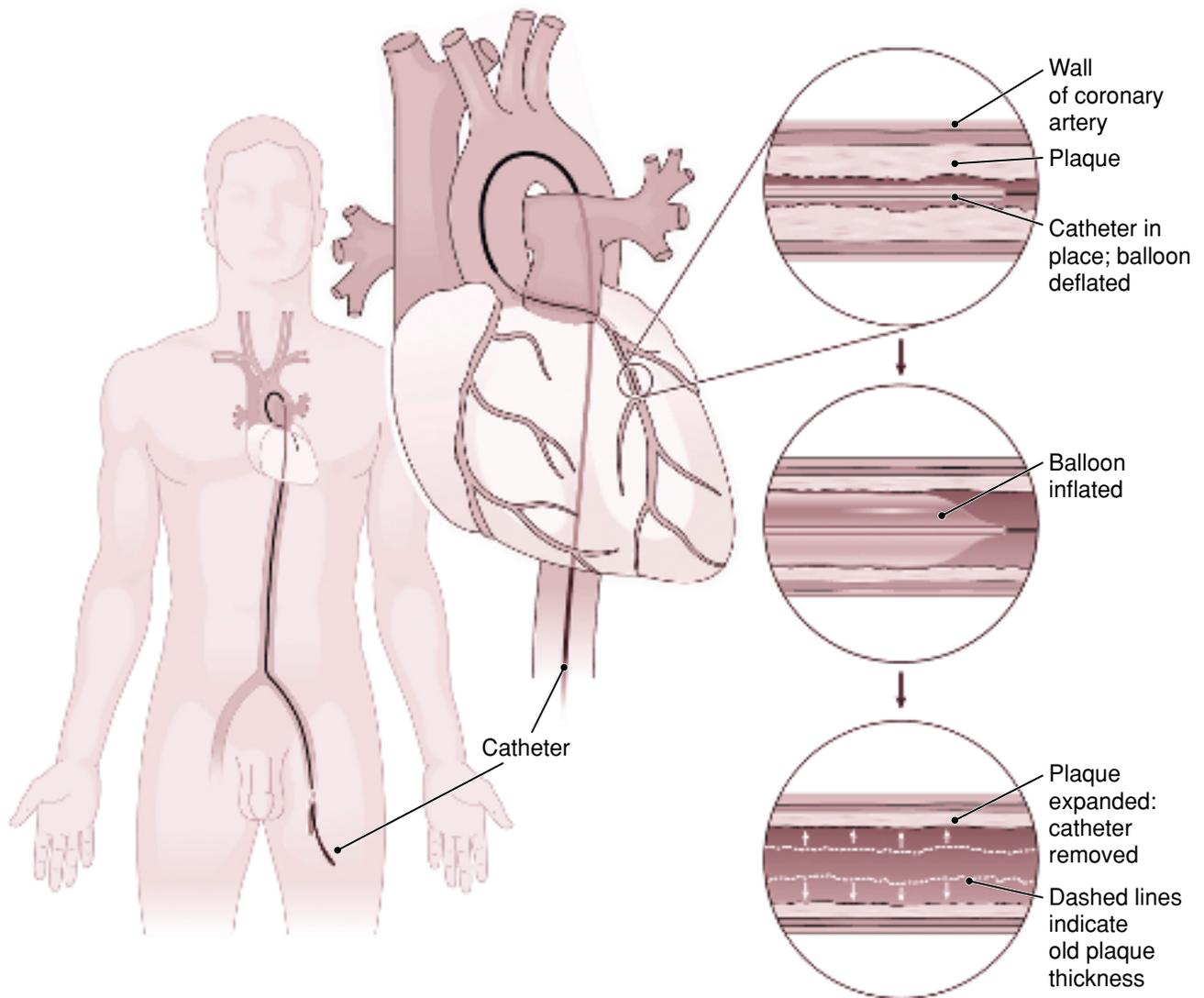
Two approaches are transthoracic and transesophageal echocardiogram. Transthoracic is performed by passing the transducer directly over the chest wall externally. Transesophageal echocardiogram (TEE) requires a probe with a transducer to be passed through the mouth into the esophagus, where special expertise is necessary to place the transesophageal probe endoscopically. CPT provides codes for only this portion of the procedure if necessary, 93313 and 93316. Separate codes are then assigned to report the services of the physician who completes the TEE procedure, interprets the findings, and prepares a report.

Cardiac catheterization requires **component coding**, which was introduced in the Surgery chapter of this textbook. This method uses multiple codes to fully report complex procedures and account for all the work involved. There are three components to cardiac catheterization procedures: 1) catheter placement code, 2) all applicable injection procedure codes but only once in a given area, and 3) imaging supervision and interpretation codes that match up with the injection code(s). Cardiac catheterizations include the following procedures, which may not be coded separately:

- ▶ Catheter insertion, type should be documented as percutaneous or cut-down
- ▶ Positioning and repositioning of catheters, this includes fluoroscopic guidance
- ▶ Injection of dyes, which should be documented as to site of angiography such as coronary arteries, aorta, atria, ventricles, bypass grafts, renal and femoral vessels
- ▶ Recording of intracardiac and intravascular pressures
- ▶ Obtaining blood samples for blood gas analysis or dilution curves
- ▶ Cardiac output measurements
- ▶ Pharmacologic administration

For correct code assignment, in addition to the preceding items, the report should contain the side(s) of the heart evaluated, the method of accessing the left side of the heart, presence of congenital anomalies, and insertion of a closure device.

If the cardiologist discovers significant blockage of coronary vessels during cardiac catheterization, he or she may elect to perform percutaneous transluminal coronary angioplasty (PTCA). PTCA (see Fig. 8.6) is now



**FIGURE 8.6** ■ Coronary angioplasty. A guide catheter is threaded into the coronary artery. A balloon catheter is inserted through the occlusion, and the balloon is inflated and deflated until plaque is flattened and the vessel is opened.

commonly referred to as percutaneous coronary intervention (PCI), and these terms and abbreviations may be used interchangeably. PTCA is performed at the same episode as cardiac catheterization, and both procedures are coded.

During PTCA, the cardiologist may elect to place stents in narrowed vessels in addition to balloon angioplasty. If stent placement is performed, the PTCA is not coded separately, as this is an integral part of the stenting procedure. Stenting codes are assigned for each vessel treated, but multiple stents in one vessel are reported as one stenting. Cardiac catheterization is coded in addition to the stenting procedure.

Atherectomy may also occur in conjunction with cardiac catheterization. In this procedure, a tiny instrument is used to remove the plaque from the



## FOCUS ON MEDICAL NECESSITY

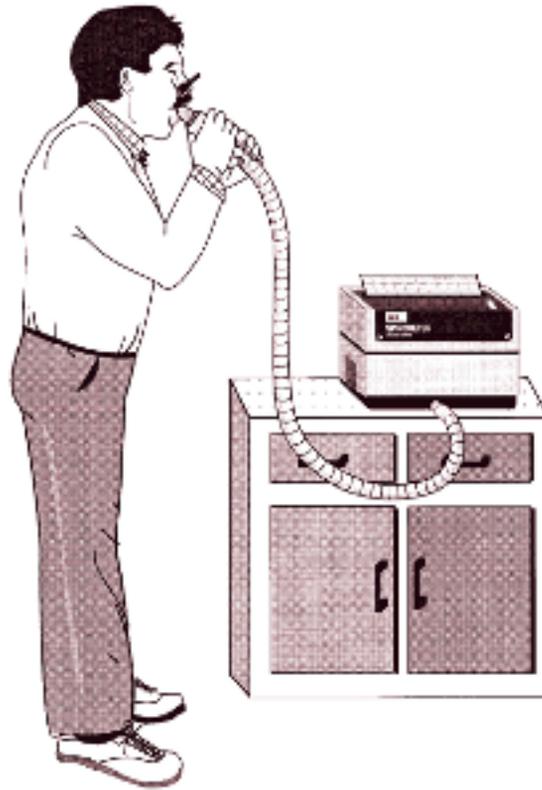
Test (CPT Code)	Possible Diagnosis	ICD-9-CM Code
Intracardiac catheter ablation of atrioventricular node function, atrioventricular conduction for creation or complete heart block, with or without temporary pacemaker placement (93650)	Anomalous atrioventricular excitation	426.7
	Lown-Ganong-Levine syndrome	426.81
	Other specified conduction disorders	426.89
	Paroxysmal supraventricular tachycardia	427.0
	Paroxysmal ventricular tachycardia	427.1
	Atrial fibrillation	427.31
	Atrial flutter	427.32
Intracardiac catheter ablation of arrhythmogenic focus; for treatment of supraventricular tachycardia by ablation of fast or slow atrioventricular pathways, accessory atrioventricular connections or other atrial foci, singly or in combination (93651)	Other specified cardiac dysrhythmias	427.89
	Same as for 93650	Same
Intracardiac catheter ablation of arrhythmogenic focus; for treatment of ventricular tachycardia (93652)	Same as for 93650	Same

inner walls of the narrowed vessel. PTCA is not coded separately with atherectomy, as the code description includes the statement “with or without balloon angioplasty.” Cardiac catheterization is coded in addition to atherectomy.

Electrophysiologic studies (EPS) and mapping are diagnostic procedures performed to determine areas of damaged tissue in the heart that cause severe arrhythmias, such as atrial fibrillation, ventricular tachycardia, and/or ventricular fibrillation. Intracardiac catheter ablation is then performed to destroy the focus of aberrant tissue. The patient will typically receive these services on the same date, beginning with the EPS, then the mapping or measuring of EPS events with the patient in a resting state, and finally the ablation or destruction of the area of ectopic tissue (localized area of irritated or diseased tissue) in the area of the atrioventricular node. The Focus on Medical Necessity table above provides ICD-9-CM codes for diagnoses related to cardiac procedures from the local coverage determination for Highmark Medicare Services Pennsylvania Carrier, provided on the CMS Web site. Local coverage determinations are often provided by a state for specificity in determining medical necessity.

## Pulmonary Services (94002–94799)

A mechanical ventilator is a device used to assist the patient with breathing. Ventilator management codes are provided for inpatient services as well as nursing home, rest home, and assisting living. The codes are based on initial day or subsequent day(s). Codes from this subsection cannot be used in conjunction with E/M codes. For home health visits for mechanical ventilator care, assign code 99504.



**FIGURE 8.7** ■ Spirometer. Used to measure lung volumes and capacities.

Pulmonary function testing includes spirometry, which is a measurement of breathing mechanics (Fig. 8.7). The patient takes a maximal inhalation and then performs maximal exhalation as fast and hard as possible into a spirometer, a device that measures lung volume and intrapulmonary pressure. Data are plotted on both a volume-time curve and a flow-volume curve. CPT provides a code for spirometry performed before and after bronchodilator treatment. Code 94060 is assigned if multiple increasing dosages of a treatment are administered to determine the effects of the treatment in increments.

#### EXAMPLE

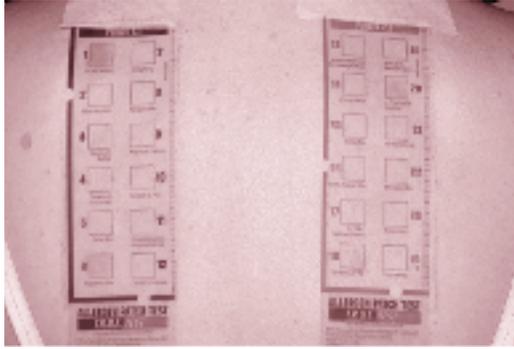
*Before and after bronchodilator test using aerosolized Alupent: 94060, J7669 or 99070.*

## Allergy and Clinical Immunology (95004–95199)

CPT provides codes for allergy testing by percutaneous, intradermal, patch, inhalation, and ingestion methods. (See Fig. 8.8 for an example of a patch test.) Once sensitivities have been determined, the patient may be treated by immunotherapy. Professional services may include only the injection. Codes include services of patient observation and patient education. A separate E/M code is not assigned.

#### EXAMPLE

*A college student provides a vial of serum to the health center for periodic allergy shots by the health center nurse. Student presents for a single injection: 95115.*



**FIGURE 8.8** ■ Allergy test patches. Patches will be removed after 48 hours.

Professional services may also include the physician who prepares and provides the antigen. The comprehensive codes (95120–95134) include both services and are described as either single or two or more injections for the allergenic extracts. Additional codes are provided for single, two, three, four, or five insect venoms. An E/M code is not submitted on the day of allergen injections unless a separate service is provided.

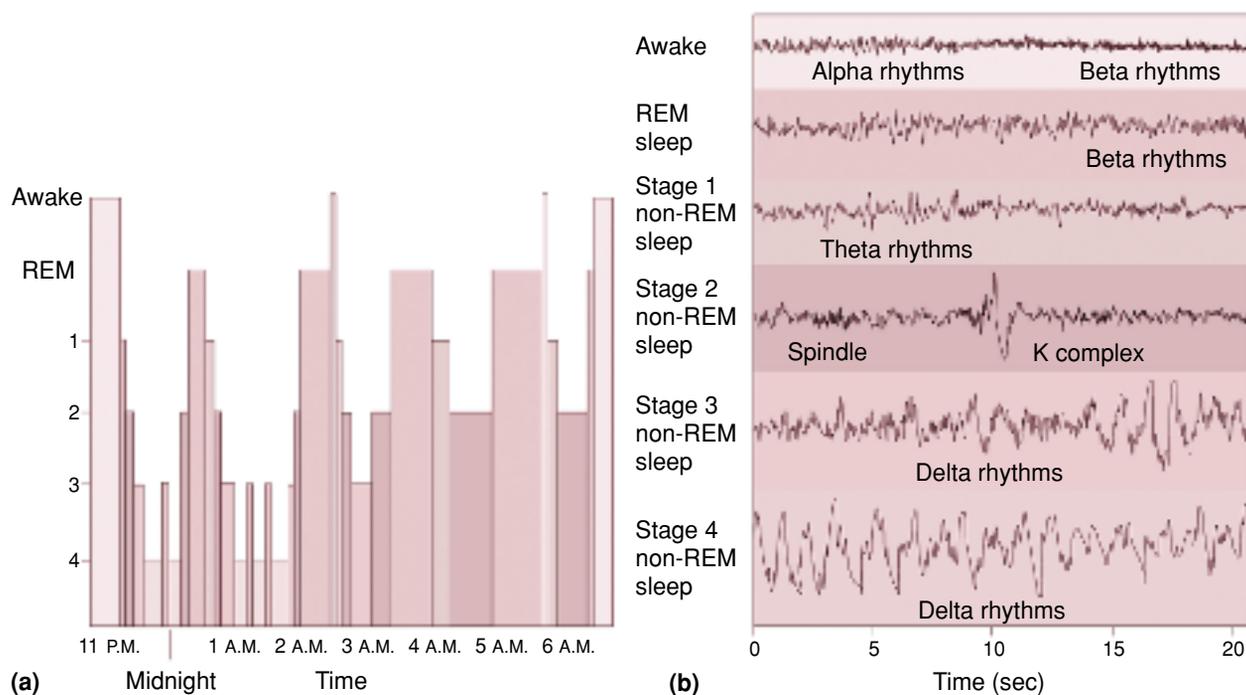
## Neurology (95805–96020)

Neurology is the medical specialty concerned with diagnosis and treatment of disorders of the neuromuscular system. A variety of tests are included in this section of CPT, including tests of the central and peripheral nervous systems (CNS and PNS).

Sleep studies are usually performed at a hospital or in a specialized facility designed for the evaluation of sleep disorders. The patient may or may not be attended by a technologist. Ventilation, respiratory effort, electrocardiogram (or heart rate), and oxygen saturation are measured. Polysomnography testing includes electroencephalography (EEG), electrooculography (EOG), and electromyography (EMG). Sleep staging (Fig. 8.9) is performed with these three measures and one to three additional factors including:

- ▶ Electrocardiogram
- ▶ Airflow
- ▶ Respiratory effort
- ▶ Gas exchange
- ▶ Limb muscle activity
- ▶ Extended EEG
- ▶ Penile tumescence
- ▶ Gastroesophageal reflux
- ▶ Continuous blood pressure monitoring

Codes are assigned based on the number of additional factors and whether or not continuous positive airway pressure (CPAP) is used. CPAP delivers a stream of compressed air that keeps the airway open and allows unobstructed breathing.



**FIGURE 8.9** ■ Stages of sleep during one night.

**TIP**

Code 95811 is assigned only if four or more additional factors are measured, and CPAP is initiated with 6 hours of continuous use.

If the patient is intolerant of the CPAP and it is removed before the 6 hours required, modifier -52 is appended to signify the provision of a reduced service.

Electroencephalography (EEG) is the recording of electrical activity of the brain derived from electrodes attached to the scalp. As previously mentioned, this is an important component of a sleep study. An EEG may be done as a diagnostic tool in other settings, such as to determine a possible diagnosis of epilepsy. As a routine test, it can be coded for 20 to 40 minutes of recording (95816), 41–60 minutes of recording (95812), or greater than 1 hour (95813). EEG is also performed for determination of cerebral death evaluation (i.e., “brain death”).

Special EEG tests are performed for identification of seizure focus in the cerebrum with the use of 8, 16, or more channel telemetry. The electroencephalographic recording may be done with or without video recording. Codes for these procedures are for each 24 hours and include both the recording and the physician interpretation. Code 95953 is assigned when a portable unit is used for EEG monitoring and recording.

Electromyography (EMG) is the recording of electrical activity generated in muscle for diagnostic purposes, such as evaluation for spinal cord injury or muscular dystrophy. These tests are commonly done on the extremities and four successive codes are available, depending on how many extremities are tested. Codes are also provided for EMG testing of the larynx and the hemidiaphragm.

## Chemotherapy Administration (96401–96549)

**Chemotherapy** is the treatment of a disease, usually cancer, by means of chemical substances or drugs. Chemotherapy services are complex and require physician supervision. The following services are included in chemotherapy codes: local anesthesia, IV beginning and maintenance, supplies, and preparation of chemotherapy agent(s). Timing of services is important for correct administration code assignment. The first hour is assigned code 96413, and each additional hour is assigned the add-on code 96415. Separate codes are reported for each method of administration. Administration of additional medications, such as those to control nausea or vomiting (antiemetic), are coded separately. As mentioned earlier, incidental hydration administered in conjunction with chemotherapy is not coded separately.

**TIP**

“J” codes are provided in HCPCS Level II for specific chemotherapeutic substances. These codes should be reported in addition to the administration services to fully explain the chemotherapy. For carriers that do not accept “J” codes for payment, use the supply code 99070 and specify the chemotherapeutic agent(s) the patient received.

Prolonged chemotherapy regimens may require the use of an **infusion pump**. If the regimen calls for 1 day of prolonged administration followed by a refill and second day of prolonged infusion, a code is provided for the refill services, 96521. When the regimen calls for continuous infusion for several days, including infusion pump initiation, infusions for several days, and then disconnection of the pump, codes 96416 and 99211 are reported. This is assuming no refill of chemotherapy agents is required. The final service of having the pump unhooked by a nurse is a Level 1 E/M code. If the patient returns periodically to repeat this same regimen, each treatment regimen is coded separately.

## Physical Medicine and Rehabilitation (97001–97799)

Physical therapy, occupational therapy, and athletic training sessions are provided codes for evaluation and re-evaluation. Codes in the range of 97001–97006 may be reported only one time per date of service. Specific treatment codes are also available for the therapy provided. Supervised modalities do not require direct contact with the provider and may include application of hot or cold packs, mechanical traction, electrical stimulation, vasopneumatic devices, paraffin baths, whirlpool, diathermy, infrared, and ultraviolet. These services may only be reported one time per date of service, even if they are applied to multiple body areas. However, multiple different modalities may be reported on the same date.

*Patient suffering from lumbar strain has application of hot packs and unattended electrical stimulation: 97010 and 97014.*

**EXAMPLE**

Constant attendance **modalities** require direct patient contact by the provider. This means that the provider cannot assign the patient a set of exercises to complete while the provider works with another patient. Each of the codes represents 15 minutes of treatment time with the modality. These services should be given in increments of no more than two per day. Iontophoresis is the application of electrical current to the tissue to enhance delivery of ionized medications. This service must be performed by a physical therapist to qualify for reimbursement under Medicare. Therapeutic procedures are also given in 15-minute increments. A physician or therapist must have direct patient contact for these services. If more than two patients are being supervised simultaneously, code 97150 is assigned. This would require constant attendance but not one-to-one patient contact. For physical and occupational therapy, Medicare does not consider more than 1 hour of therapeutic services medically necessary. Because of this rule, more than four 15-minute units of service submitted on a claim are likely to be denied.

**EXAMPLE**

*Two or more postoperative total hip replacement patients using treadmills for endurance training: code 97150.*

Training for activities of daily living (ADL) includes activities such as getting dressed, transfer techniques for getting on and off the toilet, in and out of the shower or tub, in and out of the bed to a chair, and use of equipment for meal preparation. These services are coded in 15-minute increments.

## Medical Nutrition Therapy, Acupuncture, and Chiropractic Manipulative Treatment (97802–98943)

Nutritional counseling must be ordered by a physician and provided by a registered dietician. The visits are timed, in 15-minute increments. Initial assessment and intervention is coded twice if the time spent with the patient is 30 minutes on the initial visit. If a physician provides nutritional counseling or therapy, a code should be assigned from the E/M section.

Acupuncture is a type of alternative, nontraditional treatment for conditions such as pain management, in which long, fine needles are inserted under the skin at particular points on the body. This therapy is of Asian origin and is becoming an accepted method in the United States. Codes are provided for the initial 15 minutes with or without electrical stimulation. Each additional 15 minutes may be coded with an add-on code, based on whether or not electrical stimulation was provided. Only one initial code may be reported for each treatment session. Evaluation and management services may be reported separately with modifier -25 if the patient presents with a separately identifiable condition that is not treated with the services included in acupuncture treatment.

Chiropractic manipulative services are provided to regions of the spine. CPT defines these as the cervical region, thoracic region, lumbar region, sacral region, and pelvic region. If manipulation is performed on more than one segment in a region, it is coded as one region adjusted.

**EXAMPLE**

*Patient who suffered an iliosacral rotation requires chiropractic manipulative treatment to the pelvic region, sacrum, and L5: 98941 (for three to four regions).*

## Special Services, Procedures, and Reports (99000–99091)

---

This subsection of CPT serves as a catchall for miscellaneous services not listed under other categories. Coders are encouraged to read all the special services codes to become familiar with the choices available there.

As discussed in the Pathology and Laboratory chapter, handling of a specimen that is sent to an outside laboratory for testing is coded 99000. Other miscellaneous codes include those used to document shipping of orthotics and prosthetics for adjustments. The miscellaneous supply code for injectables and infusion products is 99070. Other services such as medical testimony, group educational services, completion of special insurance forms, and escort of patient for treatment are also included in this CPT subsection.

Physician services may include codes for services provided after hours or on weekends or holidays. If a patient is seen emergently in the office, disrupting the schedule of patients for the day, code 99058 may be added to the applicable E/M code for the service. If a patient is seen in the office on a weekend when the office is normally closed, 99050 is assigned in addition to the E/M code. If a physician's normal business hours include being open for a portion of the day on Saturday, it would not be appropriate to include code 99050 in billing for services. In this case, code 99051 is assigned to designate that the visit occurred on a Saturday during regularly scheduled office hours. Whether or not this service code is reimbursed, third-party payers do recognize that services provided in the office are less expensive than those provided in a hospital emergency room.

### SUMMARY

The Medicine section of CPT contains codes for many services (e.g., injections and infusions) that do not fit adequately or exclusively into other sections of the CPT manual, such as Surgery of Radiology. Many specialties are represented in the Medicine section, and accordingly the codes include rules and guidelines applicable to the varied services provided. Reading through the choices available in this section will help coders become familiar with all the procedures and services listed. For example, understanding the difference between concurrent, subsequent, push, and other techniques for injections and infusions, along with proper documentation of start and stop times for services, will ensure correct code selection.

## TESTING YOUR COMPREHENSION

1. Why is a Holter monitor used?  
\_\_\_\_\_
2. What condition is tonometry performed to test for?  
\_\_\_\_\_
3. Why would a psychiatrist report medical E/M codes?  
\_\_\_\_\_
4. Which modifier is used if separate E/M services are provided on the same date as a vaccination administration?  
\_\_\_\_\_
5. What services are included in the CPT codes for injections and infusions?  
\_\_\_\_\_
6. What is the supply code provided by CPT if a carrier will not accept HCPCS Level II “J” codes?  
\_\_\_\_\_
7. What are the three tests included in polysomnography?  
\_\_\_\_\_
8. Which type of therapy service requires direct patient contact by the provider?  
\_\_\_\_\_
9. When can a physician bill using 99050 for seeing a patient on a Saturday?  
\_\_\_\_\_
10. What changes the pH of fluids in the esophagus?  
\_\_\_\_\_
11. Why is hemodialysis used in patients with ESRD?  
\_\_\_\_\_
12. What might be an advantage of using capsule endoscopy over traditional endoscopy?  
\_\_\_\_\_
13. What are the three components of cardiac catheterization coding?  
\_\_\_\_\_
14. If a physician discovers blockage of coronary vessels during cardiac catheterization, what treatment options might be undertaken (nonsurgical)?  
\_\_\_\_\_
15. What type of activities are the following: getting in and out of the shower or tub, getting in and out of the bed to a chair, and use of equipment for meal preparation?  
\_\_\_\_\_

## CODING PRACTICE I

## Chapter Review Exercises

**Directions**

Use your CPT manual to code the following tests using codes from the Medicine section.

1. Vitamin B<sub>12</sub> intramuscular injection \_\_\_\_\_
2. Electroconvulsive therapy \_\_\_\_\_
3. Patient with *Pneumocystis carinii* pneumonia is treated with aerosol pentamidine \_\_\_\_\_
4. EEG all night \_\_\_\_\_
5. Prosthetic training, leg, 35 minutes \_\_\_\_\_
6. Physical therapist provides gait training \_\_\_\_\_
7. IM injection of Penicillin \_\_\_\_\_
8. Physical therapist provides 3-D kinetic analysis of stride characteristics \_\_\_\_\_
9. 15 patch tests \_\_\_\_\_
10. Actinotherapy (ultraviolet light) \_\_\_\_\_
11. One-year-old patient receives ESRD services for 1 month including parental counseling \_\_\_\_\_
12. Patient receives Ig IM \_\_\_\_\_
13. Rhinomanometry \_\_\_\_\_
14. 12-lead ECG tracing only \_\_\_\_\_
15. Genetics counseling, 30 minutes \_\_\_\_\_
16. IM injection of testosterone \_\_\_\_\_
17. Closure of ventricular septal defect \_\_\_\_\_
18. Dermatologic treatment with ultraviolet light \_\_\_\_\_
19. Group nutritional counseling, 30 minutes \_\_\_\_\_
20. Home health care for ADL assistance \_\_\_\_\_
21. Chemotherapy treatment with 5FU for 55 minutes and subsequent hydration with D5W for 47 minutes  
\_\_\_\_\_
22. Chemotherapy treatment with Taxotere 60 mg mixed with fluids, 5 hours of continuous infusion time  
\_\_\_\_\_
23. Hydration for dehydration, 6 hours \_\_\_\_\_
24. Acupuncture without electrical stimulation, 35 minutes \_\_\_\_\_
25. Dr. 048 provides outpatient cardiac rehabilitation services with continuous ECG monitoring \_\_\_\_\_

## CODING PRACTICE II

## Medical Record Case Studies

**Directions**

1. Carefully review the medical reports provided for each case study.
2. Research any abbreviations and terms that are unfamiliar or unclear.
3. Identify as many diagnoses and procedures as possible.
4. Because only part of the patient's total record is available, think about any additional documentation that you might need.
5. If appropriate, identify any questions you might ask the physician or other health-care provider to code this case correctly and completely.
6. Complete the appropriate blanks below for each case study. Explain (in writing) questions 1–5 and assign the Medicine code(s) for question 6.

**Case Study 8.1**

Patient: **Patient QQ**

Patient documentation: **Read Medical Report 8.1.**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?  
\_\_\_\_\_
2. Are there any secondary diagnoses present that required additional procedures?  
\_\_\_\_\_
3. What was the principal or main procedure, and were other secondary procedures performed on this patient?  
\_\_\_\_\_
4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?  
\_\_\_\_\_
5. Do you have any additional questions for the physician or other health-care provider?  
\_\_\_\_\_  
\_\_\_\_\_
6. What is(are) the procedure code(s) you would assign to this case study?  
\_\_\_\_\_  
\_\_\_\_\_

**MEDICAL REPORT 8.1****GENERAL HOSPITAL  
DEPARTMENT OF RADIOLOGY**PATIENT'S NAME: **Patient QQ**DATE OF BIRTH: **7/20**DATE EXAM PERFORMED: **8/11/20XX**HOSPITAL ROOM NO.: **OP**RADIOLOGY FILE NO.: **22957833**REFERRING PHYSICIAN: **Dr. 049****2D ECHO COMPLETE STUDY****INDICATION:** Syncope

**FINDINGS:** The technical quality of the study was fair to good. Overall left ventricular chamber size appeared normal. Global left ventricular systolic function appeared normal. The estimated ejection fraction was 50 to 55%. No segmental wall motion abnormalities were detected. The left atrium and aortic root were of normal dimensions. The right-sided chambers appeared normal. No pericardial effusion was demonstrated. The cardiac valves appeared normal. Doppler is performed to monitor blood flow through the chambers and may have revealed a trace of mitral insufficiency.

---

Electronically Signed and Dated

## Case Study 8.2

Patient: **Patient RR**

Patient documentation: **Read Medical Report 8.2**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?

---

2. Are there any secondary diagnoses present that required additional procedures?

---

3. What was the principal or main procedure, and were other secondary procedures performed on this patient?

---

4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?

---

5. Do you have any additional questions for the physician or other health-care provider?

---

6. What is(are) the procedure code(s) you would assign to this case study?

---

---

## MEDICAL REPORT 8.2

Patient Name: **PATIENT RR**

Smoker: **No**

Age: 87 Diagnosis: **DYSPNEA**

Physician: **DR. 050**

### COMPLETE PULMONARY FUNCTION ANALYSIS

<b>SPIROMETRY</b>	<b>Ref</b>	<b>Pre</b>	<b>% Ref</b>	<b>Post</b>	<b>% Ref</b>	<b>% Chg</b>
FVC Liters	3.00	1.69	56	1.67	56	-1
FEV1 Liters	1.83	1.24	68	1.20	65	-1
FEV1/FVC%	78	73		72		
FEF 25-75% L/sec	1.02	0.91	89	0.80	78	-12
FEF 50% L/sec	1.84	1.45	78	1.33	72	-8
FEF 75% L/sec	0.40	0.37	92	0.30	75	-18
PEF L/sec	6.05	3.55	59	3.81	63	7
FVC Liters	3.00	1.40	47	1.32	44	-6
FIF50% L/sec		2.60		0.95		-64
PIF L/sec		2.68		2.02		-24
FEF/FIF50		0.56		1.41		153
MVV L/min	71	41	58			
F BPM		50				
<b>LUNG VOLUMES</b>						
TLC Liters	6.29	5.36	85			
VC Liters	3.00	1.69	56			
IC Liters	2.35	1.11	47			
FRC N2 Liters	3.94	4.25	108			
ERV Liters	1.18	0.43	37			
RV Liters	2.74	3.67	134			
RV/TLC %	45	69				
<b>DIFFUSING CAPACITY</b>						
DLCO mL/mmHg/min	18.4	11.1	61			
DL Adj mL/mmHg/min	18.4	11.1	61			
DLCO/VA mL/mHg/min/L	3.25	3.97	122			
VA Liters	6.35	2.81	44			
IVC Liters	1.69	1.34	80			

**PFT Result:** Forced vital capacity is mildly reduced to 56% of predicted. FEV1 is mildly reduced to 1.24 liters, which is 68% of predicted. FEV1:FVC ratio is normal at 0.73. Postbronchodilator there is a paradoxical 4% decrement in FEV1. Total lung capacity is normal at 85% of predicted. Diffusion capacity is preserved at 122% of predicted when corrected for alveolar volume of measurement.

**Impression:** No obstruction, mild restriction with paradoxical response to bronchodilator and preserved diffusion capacity. Clinical correlation suggested.

### Case Study 8.3

Patient: **Patient SS**

Patient documentation: **Read Medical Report 8.3**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?

---

2. Are there any secondary diagnoses present that required additional procedures?

---

3. What was the principal or main procedure, and were other secondary procedures performed on this patient?

---

4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?

---

5. Do you have any additional questions for the physician or other health-care provider?

---

6. What is(are) the procedure code(s) you would assign to this case study?

---

---

## MEDICAL REPORT 8.3

GENERAL HOSPITAL  
DEPARTMENT OF RADIOLOGY

**PATIENT'S NAME:** Patient SS  
**DATE EXAM PERFORMED:** 10/1/20XX  
**RADIOLOGY FILE NO.:** 257833

**DATE OF BIRTH:** 7/20  
**HOSPITAL ROOM NO.:** OP  
**REFERRING PHYSICIAN:** Dr. 051

Ultrasound Carotids, Complete, Bilateral

**INDICATION:** Dizziness, floaters in vision

**FINDINGS:** Gray-scale, color, and spectral Doppler imaging was used to examine the bilateral carotid and vertebrobasilar arterial systems. There is no evidence of significant plaquing. Incidental note is made of a tortuous left ICA with a high bifurcation. However, there is no evidence for a hemodynamically significant stenosis. The spectral Doppler values are as follows:

	Right	Left
CCA (PSV)	72	67
ICA (PSV)	94	98
ICA (EDV)	44	46
ICA/CCA ratio	1.3	1.5

The vertebral artery flow was shown to be antegrade bilaterally.

**IMPRESSION:** No ultrasound evidence for a hemodynamically significant carotid artery stenosis by NASCET criteria.

---

Electronically Signed and Dated

## Case Study 8.4

Patient: **Patient TT**

Patient documentation: **Read Medical Report 8.4**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?

---

2. Are there any secondary diagnoses present that required additional procedures?

---

3. What was the principal or main procedure, and were other secondary procedures performed on this patient?

---

4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?

---

5. Do you have any additional questions for the physician or other health-care provider?

---

6. What is(are) the procedure code(s) you would assign to this case study?

---

---

## MEDICAL REPORT 8.4

GENERAL HOSPITAL  
DEPARTMENT OF CARDIOLOGY

<b>PATIENT'S NAME:</b>	Patient TT	<b>DATE OF BIRTH:</b>	6/1
<b>DATE EXAM PERFORMED:</b>	10/1/20XX	<b>HOSPITAL ROOM NO.:</b>	OP
<b>MEDICAL RECORD NO.:</b>	157833	<b>REFERRING PHYSICIAN:</b>	Dr. 052

---

Cardiac stress test

**INDICATION:** Syncopal episode, dizziness

The patient was stressed today using the modified Bruce protocol. The patient was able to exercise for a total of 7 minutes and 59 seconds. Maximum heart rate was 153 bpm, which is 89% of the maximum predicted heart rate. Maximum blood pressure was 130/78. The patient was asymptomatic through the whole test. She had no chest pain, no shortness of breath, and no dizziness. There were no arrhythmias and no ischemic changes.

**IMPRESSION:** Negative treadmill exercise test.

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Electronically Signed and Dated

## Case Study 8.5

Patient: **Patient UU**

Patient documentation: **Read Medical Report 8.5**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?

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2. Are there any secondary diagnoses present that required additional procedures?

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3. What was the principal or main procedure, and were other secondary procedures performed on this patient?

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4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?

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5. Do you have any additional questions for the physician or other health-care provider?

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6. What is(are) the procedure code(s) you would assign to this case study?

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## MEDICAL REPORT 8.5

### GENERAL HOSPITAL DEPARTMENT OF CARDIOLOGY

<b>PATIENT'S NAME:</b>	Patient UU	<b>DATE OF BIRTH:</b>	7/31
<b>DATE EXAM PERFORMED:</b>	1/19/20XX	<b>HOSPITAL ROOM NO.:</b>	OP
<b>FILE NO.:</b>	257833	<b>REFERRING PHYSICIAN:</b>	Dr. 053

Tilt table test

**INDICATION:** Syncope

### HISTORY OF THE PRESENT ILLNESS

The patient is a 48-year-old woman with long history of fainting spells in young adulthood and then no fainting spells for about 20 years until her late 40s. She then began to have slight episodes of lightheadedness after working out at the gym. These occurred during the cool-down period. She did not actually faint but was able to abort the episode by going and lying down in the changing room. She then was at a dinner party at her friend's house and had a syncopal event preceded by lightheadedness and flushing. She lost consciousness for about 5 seconds. Subsequent echocardiogram and stress test were totally normal.

### DESCRIPTION OF PROCEDURE

The patient was brought to the electrophysiology laboratory in a stable fasting condition. IV access was obtained. Blood pressure was intermittently monitored using a standard cuff. ECG was continuously monitored. The patient was watched in the supine position for a 10-minute equilibration phase and then was tilted to a 70-degree head up tilt position. About 3 minutes into the tilt, she began to complain of lightheadedness, became pale and diaphoretic, and then lost consciousness. The tilt table was rapidly removed back to the supine position, and the patient was re-equilibrated for about 10 minutes. When she was back to baseline, the electrodes and IV were removed. She was observed until fully alert and comfortable and then left the laboratory in good condition.

### RESULTS

Baseline blood pressure in the lying position was 108/70 with a heart rate of 52 beats per minute. The standing blood pressure before getting on the tilt table was 120/70 with a heart rate in the 50s. Upon tilting, the blood pressure was stable initially at 116/80 with a pulse rate of 62 beats per minute. After she began to complain of lightheadedness, the blood pressure was palpated to a systolic of 70 and the pulse rate was 69 beats per minute. After the tilt table was lowered back to the supine position, the systolic blood pressure persisted in the 80s for 1 or 2 minutes and then slowly rose back to her baseline level of 115/64. The heart rate gradually declined down to the mid 40s after the supine position was reestablished and then gradually climbed again into the 50s, which had been her baseline heart rate.

The baseline ECG showed sinus bradycardia at a rate of 56 beats per minute, and it was basically totally within normal limits. During her syncopal event, the ECG showed sinus bradycardia at a rate of 46 beats per minute and was otherwise unchanged.

### CONCLUSION

Positive tilt table test for neurocardiogenic syncope with a predominantly vasoactive component and a delayed bradycardic component. The onset of the symptoms was very rapid with a very quick prodrome of lightheadedness lasting only a few seconds.

## Case Study 8.6

Patient: **Patient VV**

Patient documentation: **Read Medical Report 8.6**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?

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2. Are there any secondary diagnoses present that required additional procedures?

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3. What was the principal or main procedure, and were other secondary procedures performed on this patient?

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4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?

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5. Do you have any additional questions for the physician or other health-care provider?

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6. What is(are) the procedure code(s) you would assign to this case study?

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## MEDICAL REPORT 8.6

GENERAL HOSPITAL  
SLEEP LAB

**PATIENT'S NAME:** Patient VV  
**DATE EXAM PERFORMED:** 3/18/20XX  
**MEDICAL RECORD NO.:** 157621

**DATE OF BIRTH:** 4/14  
**HOSPITAL ROOM NO.:** SL2  
**REFERRING PHYSICIAN:** Dr. 054

Polysomnogram sleep study

**HISTORY:** The patient is being placed in the sleep study for an evaluation to rule out obstructive sleep apnea or other sleep-related problems because she was noted on a 24-hour Holter monitor to have significant bradycardia and sinus pauses during sleep. She did describe some symptoms of EDS, insomnia, and some restlessness. Her Epworth sleepiness scale was 7 consistent with moderate sleepiness.

**AGE:** 48 **HEIGHT:** 5'5" **WEIGHT:** 145 lb

**ALCOHOL:** She drinks about one alcoholic drink per week.

**CAFFEINE:** She drinks about three cups of coffee per day.

**MEDICATIONS:** Synthroid and fludrocortisone.

**SLEEP TIME STATISTICS:** Time in bed, 411 minutes. Total sleep time, 256 minutes. Total nonREM sleep, 20 minutes. Total REM sleep, 46 minutes. Sleep onset, 10 minutes. Sleep efficiency, 62%.

**SLEEP DISRUPTION EVENTS:** She had 20 arousals, 19 awakenings, for a total of 39.

**SLEEP STAGE STATISTICS:** The patient was awake for 27.2% of the study. Stage I, 0.4%. Stage II, 42.8%. Stage III, 11.9%. Stage IV, 4.6%. REM sleep, 13.1%.

She had a total of two apneas, both central in origin for an apnea-hypopnea index of 0.5%.

**OXYGEN SATURATION:** Mean, 98% awake. Her minimum saturation during sleep was 91%. Her range was 91% to 98%. Oxygen saturations were greater than 89%, 100% of the time.

**CARDIAC EVALUATION:** ECG statistics showed her wakefulness heart rate average 53. Her sleep average was 48. She did not have any significant cardiac dysrhythmias noted.

As stated previously, there were a total of two apneas throughout the entire night, both central in origin, the longest lasting 16 seconds. They both occurred when the patient was in a nonsupine position.

## FINDINGS

1. As stated above, the two central apneas throughout the entire night.
2. ECG was notably bradycardic but no other sinus pauses were noted.
3. There were no periodic leg movements or myoclonus.
4. Snoring was light.
5. The lowest oxygen saturation was 91%.

## SUMMARY

1. This is an essentially normal sleep study record. It was an adequate study. The sleep efficiency was 62%, which is an adequate study, and the patient did reach REM sleep 13.1%, which is adequate.
2. While there was bradycardia, there were no significant dysrhythmias or pauses noted.
3. Clinical correlation suggested, but there appears to be no sleep-related disorders accounting for her bradycardia during sleep.

## Case Study 8.7

Patient: **Patient WW**

Patient documentation: **Read Medical Report 8.7**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?

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2. Are there any secondary diagnoses present that required additional procedures?

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3. What was the principal or main procedure, and were other secondary procedures performed on this patient?

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4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?

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5. Do you have any additional questions for the physician or other health-care provider?

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6. What is(are) the procedure code(s) you would assign to this case study?

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**MEDICAL REPORT 8.7****GENERAL HOSPITAL  
PHYSICAL THERAPY DEPARTMENT****PATIENT'S NAME:** Patient WW**DATE OF BIRTH:** 5/14**DATE EXAM PERFORMED:** 2/16/20XX**HOSPITAL ROOM NO.:** OP**MEDICAL RECORD NO.:** 142980**REFERRING PHYSICIAN:** Dr. 055**PROGRESS NOTE****S:** "My back has been bothering me a lot."**O:** Rode bicycle 15 minutes in exercise room to warm up. Back massage 12 minutes.

Cervical traction 20 minutes 8# to 30#, with moist heat to low back 20 minutes.

Diagonal/lateral chest passive stretches. Lateral trunk stretches. Core stability exercises. Active stretch knee to chest unilateral and bilateral. 17 minutes.

**A:** Tolerated well.**P:** Continue three times a week.

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Electronically Signed and Dated

## Case Study 8.8

Patient: **Patient XX**

Patient documentation: **Read Medical Report 8.8**

1. What is the diagnosis (description) that supports the medical necessity of this procedure?

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2. Are there any secondary diagnoses present that required additional procedures?

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3. What was the principal or main procedure, and were other secondary procedures performed on this patient?

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4. Do you believe you need additional documentation to correctly assign the Medicine codes to this record? If so, what is the additional documentation that you need?

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5. Do you have any additional questions for the physician or other health-care provider?

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6. What is(are) the procedure code(s) you would assign to this case study?

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**MEDICAL REPORT 8.8****FOLLOWUP OFFICE VISIT****PATIENT'S NAME:** Patient XX**DATE OF BIRTH:** 3/31**DATE EXAM PERFORMED:** 6/6/20XX**MEDICAL RECORD NO.:** 1101**CHART NOTE**

**SUBJECTIVE:** This 77-year-old female comes in today for an eye check. She has newly diagnosed diabetes mellitus and complaints of impaired vision.

**OBJECTIVE:** BP 220/114, checked twice. Pulse rate 72 beats per minute. Snellen test without glasses showed visual acuity 20/40 left and right. Pupils were equal, round, reactive to light and accommodation. Cranial nerves intact. Mature cataracts noted bilaterally. Evaluation of the disks of her eyes was hampered by constriction of the pupils; however, some mild arteriolar narrowing could be detected. Funduscopy was inadequate because of the brisk papillary constriction.

**ASSESSMENT**

1. Impaired visual acuity secondary to cataracts and possibly effects from diabetes mellitus.
2. Markedly elevated hypertension.

**PLAN:** She was advised to seek medical attention for the hypertension. Following a medical workup, we will evaluate the cataracts further and possibly consider surgery.

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Electronically Signed and Dated