



Desk Reference

# Coders' Desk Reference for Procedures

Answers to your toughest CPT® coding questions

SAMPLE



**2025**

[optumcoding.com](http://optumcoding.com)

# Contents

---

<b>Introduction</b> .....	<b>1</b>	<b>Reimbursement Terms</b> .....	<b>41</b>
Format .....	1	<b>Clinical Abbreviations, Prefixes, Suffixes, and Acronyms</b> .....	<b>63</b>
Using CPT Codes .....	1	Prefixes/Suffixes .....	63
Using CPT Modifiers .....	1	Abbreviations/Acronyms/Symbols .....	67
Using E/M Codes .....	1	<b>Procedural Eponyms</b> .....	<b>105</b>
Place of Service/Type of Service .....	1	<b>Surgical and Laboratory Terms</b> .....	<b>119</b>
Reimbursement Terms .....	1	<b>Anatomical Illustrations</b> .....	<b>133</b>
Clinical Abbreviations, Prefixes, Suffixes, and Acronyms .....	1	<b>CPT® Lay Descriptions</b> .....	<b>167</b>
Procedural Eponyms .....	1	Integumentary .....	167
Surgical and Laboratory Terms .....	2	Musculoskeletal .....	188
Anatomical Illustrations .....	2	Respiratory .....	330
CPT Lay Descriptions .....	2	Cardiovascular .....	362
<b>Using CPT® Codes</b> .....	<b>3</b>	Hemic/Lymphatic .....	443
The CPT Book Conventions .....	3	Mediastinum and Diaphragm .....	448
Format .....	3	Digestive .....	449
Resequencing of CPT Codes .....	4	Urinary .....	524
Symbols .....	10	Male/Female .....	556
Modifiers .....	10	Maternity Care and Delivery .....	596
Glossary of Terms .....	10	Endocrine .....	602
<b>Using CPT® Modifiers</b> .....	<b>15</b>	Nervous .....	604
<b>Evaluation and Management (E/M)</b>		Eye and Ocular Adnexa .....	644
<b>Services Guidelines</b> .....	<b>23</b>	Auditory .....	670
E/M Guidelines Overview .....	23	Radiology .....	680
Classification of Evaluation and Management (E/M) Services .....	23	Pathology and Laboratory .....	733
Levels of E/M Services .....	26	Proprietary Laboratory Analysis .....	860
Unlisted Service .....	33	Medicine .....	861
Special Report .....	33	Evaluation and Management .....	938
<b>Place of Service/Type of Service</b> .....	<b>35</b>	Category III .....	949
Place-of-Service Codes for Professional Claims .....	35		
Type of Service .....	39		

# Introduction

Coding is a complicated business. It's not enough to have a current copy of a CPT® book. Medical coders also need dictionaries and specialty texts if they are to accurately translate physicians' operative reports or patient charts into CPT codes.

That's why Optum originally developed *Coders' Desk Reference*—now known as *Coders' Desk Reference for Procedures*—to provide a resource with answers to CPT coding questions. We polled the medical reimbursement community and our technical staff to determine the issues causing bottlenecks in a coder's workload.

We know that experienced coders are frustrated by limited definitions accompanying many CPT codes. Beginning coders need guidelines on the use of CPT codes and basic information about medical and reimbursement issues. Everyone requires up-to-date information about the anticipated changes in procedural coding.

*Coders' Desk Reference for Procedures* (CDR) answers the questions of both experienced and novice medical coders. Coders, physicians, registered nurses, physician assistants, and physical therapists contributed to the technical information contained in CDR. The result is a compendium of answers to a wide variety of CPT coding questions.

Since the first release of CDR in 1995, coders' corrections, suggestions, and tips have been incorporated into every printing, making this book as informative and useful as possible. Changes reflecting the dynamic world of coding are ongoing, and Optum encourages input for inclusion in future editions of the book. Information in CDR has been updated to reflect 2024 CPT codes.

## Format

CDR is divided into convenient sections for easy use, with each section organized in alphabetic or numeric order. Simply access the section by thumbing through the convenient tabbing system to find the specific item of interest.

## Using CPT Codes

For the new coder, and even for the veteran, this chapter provides an overview of the CPT book: what it is and how best to use this coding system for identifying procedures.

## Using CPT Modifiers

Modifiers augment CPT codes to the satisfaction of private and government payers. Optum coding experts interpret CPT modifiers and identify their advantage in reimbursement.

## Using E/M Codes

Although some of the most commonly used codes by physicians of all specialties, evaluation and management (E/M) codes are amongst the least understood. These codes, introduced in the 1992 CPT book, were designed to increase accuracy and consistency in the reporting of non-procedural encounters. This section contains the official 2024 guidelines.

## Place of Service/Type of Service

This section contains place-of-service codes that should be used on professional claims and type-of-service codes used by the Medicare Common Working File.

## Reimbursement Terms

In order to get reimbursed in a timely manner, it is important to have a clear understanding of the terminology used by major insurers and the federal government. This section includes up-to-date terminology that will help coders have a better understanding of the complex reimbursement climate.

## Clinical Abbreviations, Prefixes, Suffixes, and Acronyms

The medical profession has its own shorthand for documentation. Here, acronyms, abbreviations, and symbols commonly seen on operative reports or medical charts are listed for easy reference.

The uniquely efficient language of medicine is based on prefixes and suffixes attached to root words to modify the meaning. Medical prefixes and suffixes evolved from the Greek and Latin used by pioneering physicians.

## Procedural Eponyms

What is the Mitrofanoff operation? What is the Binet test? Eponyms honor the developer of a procedure or test, but do little to clarify what the procedure is. Subject matter experts have researched the procedural eponyms found in the index of the CPT book or used by surgeons and other medical

# Using CPT® Modifiers

Modifiers allow coders to indicate that a service was altered in some way from the stated CPT® description without actually changing the basic definition of the service. Modifiers are considered an essential component of accurate coding. Some modifiers impact reimbursement and others identify special circumstances. Modifiers can indicate the following:

- A service or procedure represents only a professional or technical component
- A service or procedure was performed by more than one physician
- Only part of a service was performed
- An adjunctive service was performed
- A bilateral procedure was performed
- A service or procedure was provided more than once
- Unusual events occurred
- A procedure or service was more difficult or took longer or was less involved or required less time

Physical status modifiers, P1-P6, specifically used for anesthesia services, are not discussed in this chapter. HCPCS modifiers, beginning with an alpha character, may be appended to CPT codes in specific circumstances and are also not discussed in this chapter.

## 22 Increased Procedural Services

Modifier 22 is not appropriate for CPT codes with the term “simple” as part of the code description, nor should it be appended to a code for an E/M service. Rather, modifier 22 is used to indicate that a procedure was complicated, complex, difficult, or took significantly more time than usually required by the provider to complete the procedure. Documentation, including notations to the amount of time involved, should be provided with the billing and kept in the medical record when this modifier is used. Time notations in the documentation should include start and stop times, as well as the total amount of additional time required to complete the procedure. The provider should clearly state *specifically*, and in detail, what issues made the procedure more complex rather than simply using vague statements such as, “The patient had a lot of adhesions.” When modifier 22 is used, an operative report should always be attached to the claim.

The fee reported for modifier 22 should be the usual and customary amount for the procedure plus an additional amount for the unusual circumstances. If modifier 22 is appended to a code that is not the

primary code, and modifier 51 has been appended, modifier 22 should be paid in addition to the cut contract rate paid for the code.

Modifier 22 often produces an automatic review or audit by payers. If the operative report attached to the claim does not indicate appropriate use of the modifier, the increase in payment will be denied. Periodic training for all involved in the coding process is important from both a legal and reimbursement perspective.

Because modifier 22 is often used when complications are encountered during surgical procedures, medical necessity is substantiated by additional diagnostic codes that identify the complication. These diagnostic codes should reflect the operative condition and the complication(s) encountered during the surgery.

## 23 Unusual Anesthesia

This modifier is used by anesthesiologists to indicate that this procedure is normally performed under local anesthesia or regional block but due to unusual circumstances, general anesthesia is needed. This modifier is not appropriate for use with codes that include the term “without anesthesia” in the descriptor, or for procedures normally performed under general anesthesia.

## 24 Unrelated Evaluation and Management Service by the Same Physician or Other Qualified Health Care Professional During a Postoperative Period

This modifier reports that an unrelated E/M service was provided by the surgeon within the global period. Use of this modifier needs to be correlated to a diagnosis code that is unrelated to the surgical diagnosis code.

## 25 Significant, Separately Identifiable Evaluation and Management Service by the Same Physician or Other Qualified Health Care Professional on the Same Day of the Procedure or Other Service

This modifier indicates that on the same day a procedure or service identified by a CPT code is performed, the patient’s condition required a significant, separately identifiable E/M code beyond the usual level of service required for the procedure. In addition, the modifier denotes that the patient’s condition required services that were over and above

# Evaluation and Management (E/M) Services Guidelines

## E/M Guidelines Overview

The E/M guidelines have sections that are common to all E/M categories and sections that are category specific. Most of the categories and many of the subcategories of service have special guidelines or instructions unique to that category or subcategory. Where these are indicated, eg, "Hospital Inpatient and Observation Care," special instructions are presented before the listing of the specific E/M services codes. It is important to review the instructions for each category or subcategory. These guidelines are to be used by the reporting physician or other qualified health care professional to select the appropriate level of service. These guidelines do not establish documentation requirements or standards of care. The main purpose of documentation is to support care of the patient by current and future health care team(s). These guidelines are for services that require a face-to-face encounter with the patient and/or family/caregiver. (For 99211 and 99281, the face-to-face services may be performed by clinical staff.)

In the **Evaluation and Management** section (99202-99499), there are many code categories. Each category may have specific guidelines, or the codes may include specific details. These E/M guidelines are written for the following categories:

- Office or Other Outpatient Services
- Hospital Inpatient and Observation Care Services
- Consultations
- Emergency Department Services
- Nursing Facility Services
- Home or Residence Services
- Prolonged Service With or Without Direct Patient Contact on the Date of an Evaluation and Management Service

## Classification of Evaluation and Management (E/M) Services

The E/M section is divided into broad categories, such as office visits, hospital inpatient or observation care visits, and consultations. Most of the categories are further divided into two or more subcategories of E/M services. For example, there are two subcategories of office visits (new patient and established patient) and there are two subcategories of hospital inpatient and observation care visits (initial and subsequent). The

subcategories of E/M services are further classified into levels of E/M services that are identified by specific codes.

The basic format of codes with levels of E/M services based on medical decision making (MDM) or time is the same. First, a unique code number is listed. Second, the place and/or type of service is specified (eg, office or other outpatient visit). Third, the content of the service is defined. Fourth, time is specified. (A detailed discussion of time is provided in the Guidelines for Selecting Level of Service Based on Time.)

The place of service and service type are defined by the location where the face-to-face encounter with the patient and/or family/caregiver occurs. For example, service provided to a nursing facility resident brought to the office is reported with an office or other outpatient code.

## New and Established Patients

Solely for the purposes of distinguishing between new and established patients, **professional services** are those face-to-face services rendered by physicians and other qualified health care professionals who may report evaluation and management services. A new patient is one who has not received any professional services from the physician or other qualified health care professional or another physician or other qualified health care professional of the **exact** same specialty **and subspecialty** who belongs to the same group practice, within the past three years.

An established patient is one who has received professional services from the physician or other qualified health care professional or another physician or other qualified health care professional of the **exact** same specialty **and subspecialty** who belongs to the same group practice, within the past three years. See Decision Tree for New vs Established Patients.

AMA CPT® Evaluation and Management (E/M) Services Guidelines reproduced with permission of the American Medical Association.

▶ ◀ = Contains new or revised text

## Abbreviations/Acronyms/ Symbols

2019-nCoV	COVID-19.	AAL	Anterior axillary line.
<	Less than.	AAMT	American Association for Medical Transcription.
< =	Less than or equal to.	AAN	American Academy of Neurology.
>	Greater than.	AAO	American Academy of Ophthalmology.
> =	Greater than or equal to.	AAO-HNS	American Academy of Otolaryngology—Head and Neck Surgery.
@	At.	AAOA	American Academy of Otolaryngic Allergy.
A	<b>1)</b> Absorbance. <b>2)</b> Adenosine. <b>3)</b> Artery. <b>4)</b> Assessment. <b>5)</b> Blood type.	AAOS	American Academy of Orthopaedic Surgeons.
a fib	Atrial fibrillation.	AAOMS	American Association of Oral and Maxillofacial Surgeons
a flutter	Atrial flutter.	AAP	American Academy of Pediatrics.
A&O	Alert and oriented.	AAPA	American Academy of Physician Assistants.
A&Ox3	Alert and oriented to person, place, and time.	AAPAN	American Association of Payers, Administrators, and Networks.
A&P	Auscultation and percussion.	AAPC	American Academy of Professional Coders.
A-P	Anterior posterior.	AAPM	Advanced Alternative Payment Models.
A-V	<b>1)</b> Arteriovenous. <b>2)</b> Atrioventricular.	AAPM&R	American Academy of Physical Medicine and Rehabilitation.
a.a.	Of each.	AAROM	Active assistive range of motion.
a.c.	Before meals.	AAT	Alpha-1 antitrypsin.
a.d.	<b>1)</b> Right ear. <b>2)</b> To, up to.	AAV	<b>1)</b> Adeno associated virus. <b>2)</b> AIDS-associated virus.
a.m.	Morning.	AAW	Anterior aortic wall.
a.p.	After meals.	AB	<b>1)</b> Abortion. <b>2)</b> Antibiotic. <b>3)</b> Antibody. <b>4)</b> Blood type.
a.s.	Left ear.	ABA	Allergic bronchopulmonary aspergillosis.
a.u.	Each ear, both ears.	ABBI	Advanced breast biopsy instrumentation.
A/G	Albumin-globulin ratio.	ABC™	Achievable Benchmark of Care™.
A/S, A.S., or AS	Administrative simplification.	abd	Abdomen.
A2	Aortic second sound.	ABE	Acute bacterial endocarditis.
AA	<b>1)</b> Alcoholics Anonymous. <b>2)</b> Amino acid. <b>3)</b> Anaplastic astrocytoma. <b>4)</b> Anesthesiology assistant. <b>5)</b> Azytoid adduction.	ABG	Arterial blood gas.
AAA	Abdominal aortic aneurysm.	ABI	<b>1)</b> Acquired brain injury. <b>2)</b> Ankle-brachial index. <b>3)</b> Auditory brainstem implant.
AAASF	American Association for the Accreditation of Ambulatory Surgery Facilities.	ABLB test	Alternate binaural loudness balance test.
AABB	American Association of Blood Banks.	ABN	Advance beneficiary notice of noncoverage.
AAC	American Academy of Cardiology.	abn.	Abnormal.
AACD	Aging-associated cognitive decline.	ABO	<b>1)</b> Blood group system. <b>2)</b> Referring to ABO incompatibility.
AACG	Acute angle-closure glaucoma.	ABPM	Ambulatory blood pressure monitoring.
AACR	American Association for Cancer Research.		
AAFP	American Academy of Family Physicians.		
AAHomecare	American Association for Homecare.		
AAHP	American Association of Health Plans.		
AAI	Acute alcohol intoxication.		

# Procedural Eponyms

The medical custom of honoring a popular procedure's originator by name may prove to be problematic for the coder, who may have no trouble coding a Marshall-Marchetti but be faced with choosing one of the many Maze procedures.

The following list includes many of the procedures described by eponym in operative notes or other medical documentation; several are also included in the CPT® book.

## Abbe-Estlander procedure

- 40527 Excision of lip; full thickness, reconstruction with cross lip flap (Abbe-Estlander)
- 40761 Plastic repair of cleft lip/nasal deformity; with cross lip pedicle flap (Abbe-Estlander type), including sectioning and inserting of pedicle

*Surgical technique for a lip repair.*

## Adson test

- 95870 Needle electromyography; limited study of muscles in 1 extremity or non-limb (axial) muscles (unilateral or bilateral), other than thoracic paraspinal, cranial nerve supplied muscles, or sphincters

*Physiological assessment for thoracic outlet syndrome.*

## Altemeier procedure

- 45130 Excision of rectal procidentia, with anastomosis; perineal approach
- 45135 Excision of rectal procidentia, with anastomosis; abdominal and perineal approach

*Removal of a rectal prolapse through a perineal approach or through a combined abdominal and perineal approach.*

## Anderson's method of tibial lengthening

- 27715 Osteoplasty, tibia and fibula, lengthening or shortening

*Technique in which the tibia is severed and screws are affixed to plates supporting the bone across the gap to lengthen the patient's leg.*

## Aries-Pitanguy mammoplasty

- 19318 Breast reduction

*Procedure to reduce breast size.*

## Babcock's operation

- 37700 Ligation and division of long saphenous vein at saphenofemoral junction, or distal interruptions

*Varicose veins are eliminated using a long probe and tying the end of the vein to it to draw out the vein by invagination.*

## Baker tube

- 44021 Enterotomy, small intestine, other than duodenum; for decompression (eg, Baker tube)

*Tube placed into the jejunum or small bowel for decompression or extensive adhesions.*

## Bankart procedure

- 23455 Capsulorrhaphy, anterior; with labral repair (eg, Bankart procedure)

*Procedure used to treat recurrent dislocation of the shoulder requiring reconstruction of the avulsed capsule and labrum at the glenoid lip.*

## Barany caloric test

- 92533 Caloric vestibular test, each irrigation (binaural, bithermal stimulation constitutes 4 tests)

*Extent of nystagmus is determined by irrigating the external auditory meatus with hot or cold water.*

## Barkan operation

- 65820 Goniotomy

*Technique corrects glaucoma by opening Schlemm's canal.*

## Barsky's operation

- 26580 Repair cleft hand

*Cleft hand repaired by closing the cleft, bringing the ring and index fingers closer together, and correcting webbing between the fingers.*

## Batch-Spittler-McFaddin operation

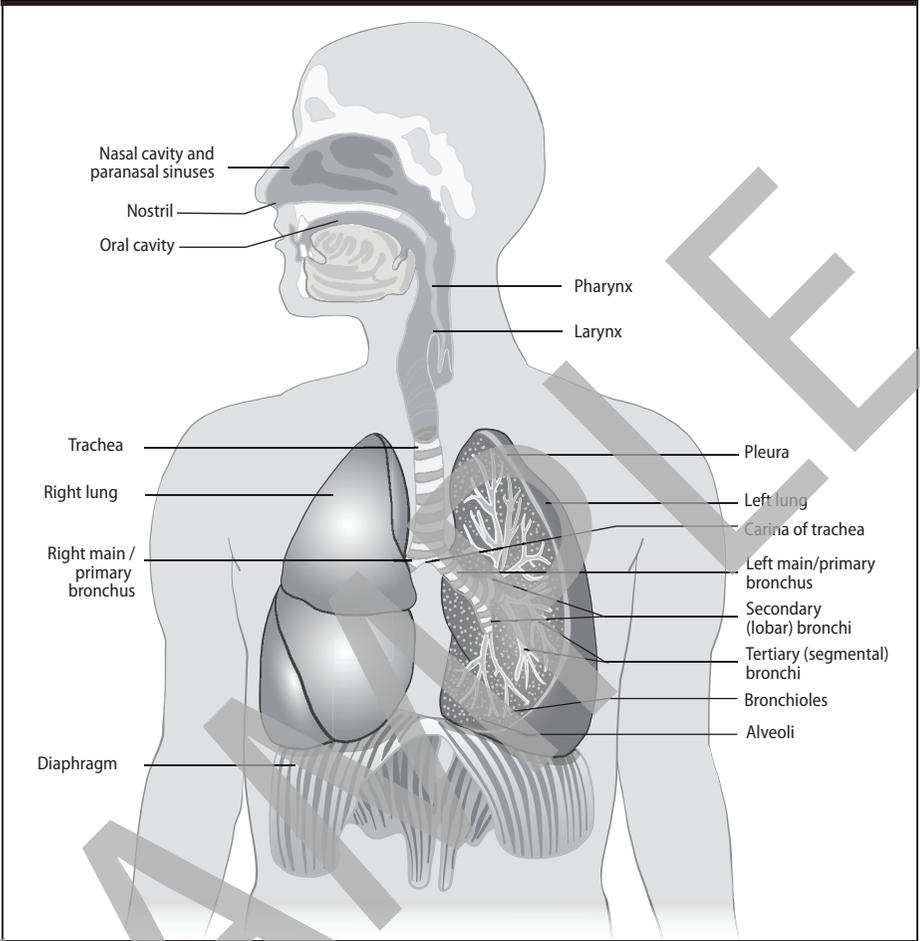
- 27598 Disarticulation at knee

*Leg is severed at the knee joint, which offers an alternative to severing a long bone.*

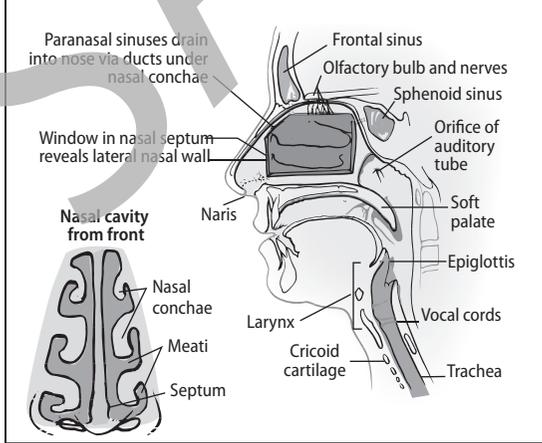
## Belsey procedure

- 43328 Esophagogastric fundoplasty partial or complete; thoracotomy
- 43334 Repair, paraesophageal hiatal hernia (including fundoplication), via thoracotomy, except neonatal; without implantation of mesh or other prosthesis

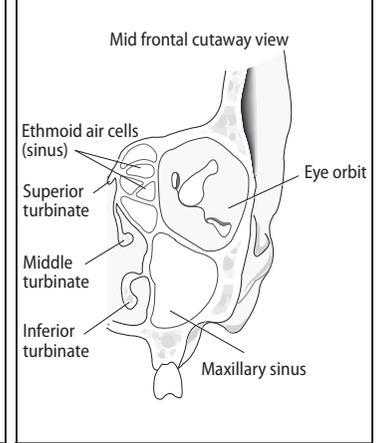
### Respiratory System



#### Upper Respiratory System



#### Nasal Turbinates



# CPT<sup>®</sup> Lay Descriptions

CPT<sup>®</sup> descriptions are written for people with medical training but may not offer the details needed to choose a code based on a patient's chart or an operative report. The following overview of the procedures listed in CPT describes the most common methods of each in general terms. Where possible, descriptions are in lay terms for coders' use. Key words used in the operative report are included to facilitate coding.

Unlisted procedures are excluded from this chapter. Be aware insurance payers usually review unlisted procedure codes manually, increasing processing time and the need for documentation.

Because some consecutive codes describe similar procedures, their descriptions have been combined under one heading, which indicates the range of codes described. If a satisfactory code description cannot be matched with the patient's chart, consult the physician.

## Integumentary

**10021 [10004, 10005, 10006, 10007, 10008, 10009, 10010, 10011, 10012]**

Fine needle aspiration (FNA) is a diagnostic percutaneous procedure that uses a fine gauge needle (often 22 or 25 gauge) and a syringe to sample fluid from a cyst or remove clusters of cells from a solid mass. The skin is cleansed. If a lump can be felt, the radiologist or surgeon guides a needle into the area by palpating the lump. If the lump is non-palpable, the FNA procedure is performed using ultrasound, fluoroscopy, computed tomography (CT), or MR imaging with the patient positioned according to the area of concern. Ultrasound-guided aspiration biopsy involves inserting an aspiration catheter needle device through the accessory channel port of the echoendoscope; the needle is placed into the area to be sampled under endoscopic ultrasonographic guidance. After the needle is placed into the region of the lesion, a vacuum is created and multiple in and out needle motions are performed. Several needle insertions are usually required to ensure that an adequate tissue sample is taken. In fluoroscopic guidance, intermittent fluoroscopy guides the advancement of the needle. CT image guidance allows computer-assisted targeting of the area to be sampled. At the completion of the procedure, the needle is withdrawn and a small bandage is placed over the area. MR image guidance involves the use of a magnetic field, radiowaves, and computer-assisted targeting to identify the area for biopsy without the use of ionizing radiation. Report 10021 for fine needle aspiration of the initial lesion performed without imaging guidance; for each subsequent lesion, report

10004. Report 10005 for FNA of the first lesion using ultrasound guidance; for each additional lesion, report 10006. Report 10007 for FNA of the first lesion using fluoroscopy; for each additional lesion, report 10008. Report 10009 for FNA of the first lesion utilizing CT imaging; for each subsequent lesion, report 10010. Report 10011 when MR imaging is used for the initial lesion; for each additional lesion, report 10012.

### 10030

A fluid collection in the soft tissue, such as a hematoma, seroma, abscess, lymphocele, or cyst, is drained using a catheter. The area over the abnormal tissue is cleansed and local anesthesia is administered. Imaging is performed to assist in the insertion of a needle or guidewire into the fluid collection. Small tissue samples may be collected from the site for pathological examination. A catheter is inserted to drain and collect the fluid for analysis. More imaging may be performed to ensure hemostasis. In some cases, the catheter may be attached to a drainage system to allow for further drainage over the course of days. Once the fluid has completely drained, the catheter is removed. A bandage is applied. Report 10030 for each fluid collection drained using a separate catheter.

### 10035-10036

The physician places a soft tissue localization device prior to a biopsy. Using image guidance, the physician places a metallic clip, pellet, wire, needle, or radioactive seed adjacent to a soft tissue lesion to mark the site for an open soft tissue procedure or a percutaneous soft tissue biopsy to be performed during the same or a different encounter. Report 10035 for the first lesion and 10036 for each additional lesion, whether on the same or the contralateral side, marked using imaging guidance.

### 10040

The physician makes a small incision through the skin overlying a lesion, or multiple lesions, such as comedones (blackheads), cysts, or pustules for acne surgery. The skin over the lesion is removed. The lesion is opened with a surgical instrument and the fluid is drained for secondary healing. The lesion may be removed or marsupialized by exteriorizing the cyst and making a pouch where it used to be enclosed. No sutures are needed. Do not report a benign lesion excision code (11400-11446) and chemical exfoliation for acne (17360) on same date of service with 10040.

### 10060-10061

The physician makes a small incision through the skin overlying an abscess for incision and drainage (e.g., carbuncle, cyst, furuncle, paronychia, hidradenitis). The abscess or cyst is opened with a surgical instrument, allowing the contents to drain. The lesion may be

**47538-47540**

The physician inserts a thin needle through the skin and into the liver and injects contrast material for x-rays in order to diagnose and treat obstructions impacting the flow of bile from the liver to the gastrointestinal (GI) tract. Once the stricture or obstruction is identified, the physician places an introducer sheath into the biliary system. Under ultrasonic or fluoroscopic guidance, a stent delivery system is placed within a narrow section of the bile duct in order to keep the duct patent. Stents may be comprised of metallic mesh or plastic tubing. A balloon-tipped catheter may be required to achieve adequate expansion of the narrow duct. The stent may be a self-expandable stent, which means it opens by itself once deployed, or balloon expandable, meaning a balloon is required in order to open the stent. When a balloon expandable stent is used, the stent is generally placed over a balloon tipped catheter because once the balloon is expanded the catheter pushes the stent into place against the duct wall. Once the balloon tipped catheter is deflated and removed, the stent stays in place and functions similarly to a scaffold for the duct. A hilar malignancy may create an obstruction within both hepatic ducts and require the use of a bilateral stent. Report 47538 when this procedure is performed via an existing access site; 47539 when performed via a new access site without placement of separate biliary drainage catheters; and 47540 when performed via a new access site with placement of separate biliary drainage catheters (external or internal-external). The use of imaging, diagnostic cholangiography, balloon dilation, and/or the exchange or removal of catheters, as well as all supervision and interpretation, is included in these procedures, when performed.

**47541**

Placement of access through the biliary tree and into the small bowel is performed to assist in an endoscopic biliary procedure, such as rendezvous. The physician inserts a needle through the skin and liver moving it into the bile duct for a biliary drainage procedure. For stent placement, a drainage tube is typically placed prior to stent insertion. If this fails to resolve the obstruction, the physician inserts a guidewire and the tube is removed. A sheath is placed over the guidewire and a stent delivery system is placed within the narrow section. Tissue samples and stone removal may be performed via this access. This code includes all imaging guidance. Report this code if the access is new.

**47542**

Percutaneous balloon dilation of a biliary duct or repair of the ampulla is most often required to widen a stricture or remove stones. The repair is done due to damage caused by the stricture, stone, or by the dilation itself. The provider inserts a needle through the skin and into the biliary duct and the needle is advanced through the stricture, allowing for insertion of a balloon catheter. A guidewire is inserted over the needle into the biliary duct and the needle is removed.

The balloon is placed over the guidewire. Under imaging guidance, the balloon is filled with saline in order to stretch the vessel. The size of inflation and continuity depend on the patient's diagnosis and dispensation. Once the procedure is complete, the instruments are removed and simple closure of the access site is performed.

**47543**

Endoluminal surgery, such as a biopsy, is performed in a hollow organ (biliary tree, stomach, etc.) using common surgical techniques. Because of the nature of these procedures, they must be performed under endoscopic control and, ideally, performed via natural orifices. The physician performs a percutaneous, endoluminal biopsy of the biliary tree by brush or forceps catheters or needle using real-time imaging (ultrasound, fluoroscopy), and the specimen is deposited on a glass slide. Smears are made from the biopsy specimen, which may be used for immediate analysis (e.g., Diff-Quik) or fixed in ethanol for immunohistochemical stains. If possible, the use of an on-site cytopathologist or cytotechnologist ensures an immediate interpretation of the sample. The use of ultrasound is particularly helpful to identify small lesions that may move during respiration. Fluoroscopy is often used in conjunction with percutaneous transhepatic biliary drainage (PTBD) as a means to access the biliary tract for the purposes of conducting endoluminal biopsy.

**47544**

The physician removes a stone from the biliary duct after previous surgery. The common bile duct is approached by placing a scope into the tract through a previously placed drainage tube (T-tube). Manipulating basket or snare tools through the scope, the physician removes the stone(s). This code reports only the radiological supervision and interpretation required in performing this procedure.

**47550**

The physician performs a biliary endoscopy during the same surgical session as other biliary procedures. The physician advances an endoscope through the previously made abdominal incision. With the endoscope the physician is able to directly visualize portions of the biliary tract, which may be filled with contrast medium for identifying the common bile duct, biliary tree and gall bladder (including areas of abnormality, stricture, or obstruction) under separately reportable fluoroscopy.

**47552-47553**

The physician makes a small incision in the abdominal wall. The physician advances an endoscope through an opening in the abdominal wall or through a T-tube inserted through the abdominal wall into the common bile duct. With the endoscope, the physician is able to directly visualize portions of the biliary tract, which may be filled with contrast medium for identifying the common bile duct, biliary tree, and gallbladder (including areas of abnormality, stricture, or obstruction) under separately reportable fluoroscopy.

infused with a solution of heparin and saline to prevent clot formation. The operative wound is repaired in layers. Over time, the nerve conduit is restored and the tube is resorbed by surrounding tissue.

### 64911

The physician repairs a nerve and uses a vein graft to restore innervation. The physician obtains the venous graft by making an incision over the donor site and locating the vein. The vein is freed from surrounding tissues and excised, and vessels are tied or cauterized. The incision is sutured in layers. The physician makes an incision over the damaged nerve and dissects tissues to locate the nerve. The damaged area of the nerve is resected and removed. Innervation is restored by building a bridge of vein to each end of the resected nerve and suturing the proximal and distal ends of the bridge into place around each severed nerve end. This technique is usually limited to nerve gaps of 3 cm or less. The bridge is usually 1 cm longer than the defect so that it covers the distal and proximal ends of the resected nerve. Once the bridge is sutured into place, it is infused with a solution of heparin and saline to prevent clot formation. The operative wound is repaired in layers. Over time, the nerve conduit is restored.

### 64912-64913

The physician repairs a peripheral nerve injury using a processed human nerve allograft to restore innervation. Peripheral nerves, unlike nerves in the central nervous system, can heal but nerve function restoration may begin to diminish over a period of time. A processed human peripheral nerve graft is donated in the same manner as other tissues and organs involving donor screening. Donated nerves are processed and sterilized to avoid risk of disease transmission from the donor to the patient and, as a result of the processing procedure, the allograft does not require a patient to take immunosuppressant drugs. An allograft offers surgeons the ability to reconnect severed nerves without the potential complications or interactions associated with using another surgical site to harvest the donor nerve. In addition, a processed human nerve allograft may minimize costs and time requirements involved when the physician must harvest a nerve from the patient. The physician makes an incision over the damaged nerve and dissects tissues to locate the nerve. The damaged area of the nerve is resected and removed. Innervation is restored by building a bridge of the decellularized and processed human nerve allograft to each end of the resected nerve and suturing the proximal and distal ends of the bridge into place around each severed nerve end. This technique is usually limited to nerve gaps of 3 cm or less. The bridge is usually 1 cm longer than the defect so that it covers the distal and proximal ends of the resected nerve. Once the bridge is sutured into place, it is infused with a solution of heparin and saline to prevent clot formation. The operative wound is repaired in layers. The allograft is designed to function with the natural structural pathways for axon regeneration and over

time is absorbed into, and becomes part of, the patient's own body. Report 64912 for the first strand and 64913 for each additional strand.

## Eye and Ocular Adnexa

### 65091-65093

The physician removes the contents of the eyeball: the vitreous, retina, choroid, lens, iris, and ciliary muscles. Retained is the tough, white outer shell (the sclera). After an ocular speculum has been inserted, the physician dissects the conjunctiva free from the sclera. An elliptical incision is made in the sclera surrounding the cornea, and the contents of the anterior chamber are removed. The physician uses a spoon to remove the contents of the posterior chamber, and scrapes the inside of the sclera with gauze on a curette. Only the scleral shell remains. The conjunctiva may be removed. A temporary (65091) or permanent (65093) implant is inserted into the scleral shell at this time. The sclera is attached to the implant, usually with sutures.

### 65101-65105

The physician severs the eyeball from the extraorbital muscles and optic nerve and removes it. After an ocular speculum has been inserted, the physician dissects the conjunctiva free at the corneal-scleral juncture (the limbus). The physician cuts each extraocular muscle at its juncture to the eyeball and severs the optic nerve. The eyeball, and sometimes the conjunctiva, is removed but the extraocular muscles remain attached at the back of the eye socket. A spherical implant is placed in the eye socket. This implant, if unattached to the extraocular muscles, may be temporary (65101) or permanent (65103). The extraocular muscles may be attached to the permanent implant to allow normal movement of the prosthesis (65105).

### 65110-65112

The physician sutures the eyelids closed. An elliptical incision is cut through the skin, subcutaneous tissue, muscle and periosteum to the bone beginning at the upper nasal orbital rim and is carried below the brow to the lateral canthus. The incision is extended from the upper nasal quadrant along the nasal and inferior orbit rim to the lateral canthus, terminating in a wide canthotomy. The periosteum is freed around the orbital rim with a periosteum elevator, beginning in the upper temporal quadrant. The trochlea is detached with a sharp dissection. In the upper temporal quadrant, the lacrimal gland is removed. The lacrimal sac is separated from its attachments and removed. The medial and lateral canthal ligaments are cut with a blunt dissection. A blunt dissection is also used to separate the periorbital to the apex, and the firm attachment of the periosteum is cut from the bone with scissors. The orbital contents are removed. Pieces of orbital bone may be excised (65112). The orbit is packed with dry gauze and pressure is applied to control bleeding.

including probe placement, image acquisition, and the physician's interpretation. Report 93316 for probe placement only. Report 93317 for image acquisition, physician interpretation, and report only.

**[93319]**

The physician performs 3D echocardiographic imaging/postprocessing during the same procedural episode as transesophageal or transthoracic echocardiography performed to evaluate congenital cardiac abnormalities. Cardiac structures are assessed and may include chambers and valves, interatrial or interventricular septum, or left atrial appendage. Cardiac function may also be assessed at this time.

**93318**

Transesophageal echocardiography (TEE) is an invasive technique whereby the transducer is placed at the tip of an endoscope and introduced into the patient's esophagus to record a two-dimensional echocardiograph. TEE provides high-quality, real-time images of the beating heart and mediastinal structures. This code reports ongoing hemodynamic monitoring using TEE. TEE may be used to monitor critically ill patients in the intensive care unit as well as patients in certain operative settings. In both the intensive care unit and the operating room, it is used to monitor cardiac function including cardiac preload, contractility, and valve function in patients with acute hemodynamic decompensation. In addition, TEE may also be used to assess and monitor mediastinal, heart, lung, and aortic injury resulting from blunt chest trauma even in patients undergoing other life-saving procedures.

**93320-93321**

Transducers are placed on a patient's chest to record a Doppler echocardiograph, which uses ultrasound to visualize blood flow velocity, direction, and type of flow in different locations in the heart. Doppler studies can be displayed on a strip chart or video recorder. Report 93320 for a complete evaluation and 93321 for limited or follow-up studies.

**93325**

The technique for Doppler color flow velocity mapping is similar to that of other echocardiographs with transducers being placed on the patient's chest to record cardiac activity. Color Doppler is two-dimensional Doppler in which the signal is encoded with color to more clearly identify flow direction. List 93325 separately in addition to the code for echocardiography (76825, 76826, 76827, 76828, 93303, 93304, 93308, 93312, 93314, 93315, 93317, 93350, and 93351).

**93350-93351, 93352**

Transducers are placed on a patient's chest to record a two-dimensional echocardiograph, which uses ultrasound to visualize the heart's function, blood flow, valves, and chambers. In 93350, the echocardiography is completed while the patient is at rest and exercising on a treadmill or stationary bicycle with or without medication and includes M-mode recording, when

performed. Code 93351 also includes the performance of continuous electrocardiographic monitoring with supervision by the physician or other qualified health care professional. Code 93352 is assigned as an additional code to report the use of an echocardiographic contrast agent during the stress test and should not be reported more than once per stress echocardiogram. Supply of the contrast agent and/or the drugs used in pharmacologic stress are reported separately in addition to these procedure codes.

**[93356]**

Myocardial strain imaging, also referred to as echocardiographic strain imaging or deformation (lengthening, shortening, or thickening) imaging, was initially utilized as a feature of Doppler imaging where velocity information is regenerated into strain rate. New technology, known as speckle tracking echocardiography (STE), utilizes image-processing algorithms to track areas of interest. Used in conjunction with two-dimensional or three-dimensional echocardiography for determining the multidirectional components of left ventricular (LV) deformation, these areas contain blocks of 20 to 40 pixels that contain constant patterns referred to as speckles. These markers or fingerprints are helpful in outlining irregularities by comprehensive assessment of regional myocardial function, specifically by discriminating between active and passive myocardial wall movement. Strain rate data assists in early detection of myocardial dysfunction and is beneficial in therapeutic decisions and follow-up of previous cardiac surgery. Report 93356 in addition to applicable codes for echocardiography imaging.

**93355**

Transesophageal echocardiography (TEE) is an invasive technique whereby the transducer is placed at the tip of an endoscope and introduced into the patient's esophagus as guidance for procedures performed on intracardiac or other great vessels and structures. The transducer sends sound waves to the heart and collects the echoes that bounce back. These echoes become high-quality moving pictures that show up on a computer screen. TEE provides high-quality, real-time images of the beating heart and mediastinal structures. This code reports the guidance during the procedure(s), as well as measurements of the surrounding structures. It includes probe navigation, image acquisition, and physician's interpretation and report. Diagnostic TEE is included and contrast administration, Doppler, color flow, and 3D images, when performed, are also included.

**93451**

The physician threads a catheter to the heart, most frequently through an introducing sheath placed percutaneously into the femoral vein. However, the physician may elect to use the subclavian, internal jugular, or antecubital vein instead. The catheter is threaded into the right atrium, through the tricuspid valve into the right ventricle, and across the pulmonary valve into the pulmonary arteries. ECG monitoring for

cholesterol from HDL (good cholesterol), which results in what is known as pre-beta-HDL. This pre-beta-HDL infused plasma is considered delipidated plasma. The delipidated plasma is infused back into the patient once a week for seven weeks.

### 0345T

A percutaneous mitral valve repair is performed. The right atrium of the heart is accessed using a catheter inserted in the internal jugular or subclavian vein. The coronary sinus is located and intubated with the compressed device within a sheath. An anchor, which resembles and functions much like a stent, on one end of the device is placed in the great cardiac vein and another is placed at the coronary sinus ostium and expanded, holding them in place. The anchors are connected by a bridge or wire. The bridge is made of dissolvable material that dissipates over time and pulls the anchors together, closing the mitral annulus. If the wire technique is used, the wire is pulled to bring the anchors closer together to shorten the mitral annulus before the anchors are expanded. Coronary compression may be assessed by angiogram and tension of the anchors adjusted. The sheath and catheter are removed and any wounds closed.

### 0347T

An interstitial device(s) is placed in bone for radiostereometric analysis (RSA). Interstitial devices allow providers to specifically follow the position of an implant, such as a prosthesis, by taking x-rays from different directions. These images are used in the RSA. The provider places these devices into the bone surrounding the prosthesis where they become fixed and can be monitored for migration of a prosthesis part(s).

### 0348T-0350T

Radiostereometric analysis (RSA) is the method of taking two x-rays from different directions concurrently. X-rays performed in this manner permit a surgeon to use exact measurements to determine how an implant and a joint are interacting. The surgeon inserts very small, seed-like tantalum beads into bone surrounding the implant or prosthesis. Tantalum is the same metal material used in prosthetic implants. Once the beads assimilate into the bone, the physician can use those beads as a reference point to identify any position changes related to the prosthesis. This permits monitoring of the patient's progress, allows for predicting how long a prosthesis may last, and provides data to help improve the design and function of prosthetic implants. Report 0348T for radiostereometric analysis on the spine, 0349T for the upper extremity(ies), and 0350T for the lower extremity(ies).

### 0351T-0352T

Optical coherence tomography (OCT) is a noninvasive, high-resolution, real-time microscopic optical-imaging technique that provides two- and three-dimensional micro-scale images of tissue structure from bulk tissue sample. This process furnishes improved quality that may be able to distinguish cancer cells from normal

cells. When performed at the time of surgical excision, it can allow for immediate detailed information about the tissue sample(s) removed. This process could reduce the amount of additional procedures that may need to be performed without this imaging. Report 0351T for excised tissue from the breast or axillary lymph node, each specimen. Report 0352T for the interpretation and report that is performed immediately or referred.

### 0353T-0354T

Optical coherence tomography (OCT) is performed on the breast, surgical cavity. OCT is a noninvasive, high-resolution, real-time microscopic optical-imaging technique that provides two- and three-dimensional micro-scale images of tissue structure from bulk tissue sample. This process furnishes improved quality that may be able to distinguish cancer cells from normal cells. When performed at the time of surgical excision, it can allow for immediate detailed information about the tissue sample(s) removed. This process could reduce the amount of additional procedures that may need to be performed without this imaging. Report 0353T when OCT is performed on the surgical cavity, breast, real time intraoperative and 0354T for the interpretation and report, real time or referred.

### 0358T

Bioelectrical impedance analysis (BIA) is a relatively simple, quick, and noninvasive technique to measure body composition, the measurement of body fat in relation to lean body mass. The provider places electrodes to various parts of the body; often this may be two electrodes on the patient's right hand and right foot. Low level, imperceptible, and painless electrical current is passed through the body. Bioelectrical impedance analysis is a practical method of measuring the degree of resistance to the current as it moves through the water found in muscles and fat tissue. Muscles contain more water than fat; the more water the body has, the easier it is for the current to pass through it. Subsequently, the more fat a patient has, the more difficult it is for the current to pass through. Measurements are taken to determine how much resistance the current meets based on the various types of tissue. BIA provides an estimate of how much body water is present in order to calculate body fat. An interpretation and report are generated after the analysis has been performed.

### 0362T

An onsite physician or other qualified health care professional, with assistance from two or more technicians, administers a behavior identification supporting assessment of a patient with serious destructive behavioral concerns, such as harming oneself, damaging property, and aggression with injury to others, or behaviors resulting from recurring actions or issues related to communication or social interactions. The technicians spend face-to-face time with the patient conducting the assessment, which includes exposure of the patient to a number of social and environmental elements associated with the maladaptive behaviors conducted in a structured and