Determining the Diagnosis
Complete guide to ICD-10-CM coding conventions and guidelines
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Chapter 7: Diseases of the Eye and Adnexa (H00-H59)

The eye is the organ of sight and has a complex anatomy and physiology. The structures of the eye, which include structures of the ball or globe, are differentiated from its supporting structures, which are ocular adnexa and bony orbit. The globe can be divided into two segments: the anterior segment, which includes the lens and all tissue anterior to the lens, and the posterior segment, which includes everything in the eyeball that is situated behind the lens. The structures of the anterior and posterior segments are surrounded by fluid: aqueous humor in the anterior segment and vitreous humor in the posterior segment. The fluid within the globe is what gives the eye its shape and it is also essential to the health of the internal structures of the eye. The globe of the eye rests in fatty tissue in the bony orbit of the skull where it is protected from jarring actions. The external structures of the eye, which include the eyelids, lacrimal system, and ocular muscles, together make up the ocular adnexa. These structures provide further protection of the globe and are also responsible for essential functions such as eye movement.

A thin, vascular mucous membrane covers the inner eyelids and the white outer shell of the eye (sclera). This membrane is called the conjunctiva. The cornea is the bulging “window” through which we see and the retina is the light-sensitive “viewing screen” at the back of the eye. The choroid is a vascular layer of the inside of the eyeball.

Guidelines for chapter 7 cover the following conditions:

- Glaucoma (I.C.7.a)
- Blindness (I.C.7.b)

Figure 5.1. Anatomy of the Eye

The guidelines for this chapter are specific to glaucoma and blindness. Many of the conditions in chapter 7 also require proficiency in other ICD-10-CM chapters. This chapter also includes complex conditions that require knowledge of the anatomy and physiology of the eye and adnexa. As
always, care must be taken to apply the ICD-10-CM conventions and instructions within the ICD-10-CM text and ICD-10-CM guidelines in general in order to accurately assign and sequence codes in this chapter.

**H40-H42 Glaucoma (I.C.7.a)**

Glaucoma is a group of eye diseases that share several common traits. In most cases, there is increased intraocular pressure (IOP) that causes optic nerve damage with subsequent vision loss. The optic nerve delivers images from the retina to the brain. When optic nerve fibers become damaged, visual field defects consisting of blind spots develop. As more damage occurs to the optic nerve, more visual field defects develop and, left untreated, can lead to blindness.

ICD-10-CM uses combination codes to classify glaucoma by type and stage to code section H40–H42. Category H40 classifies certain types of glaucoma by type, stage, and laterality. The absence of category H41 reserves space in the classification for future code expansion. Code H42 is a valid three-digit manifestation code that classifies glaucoma in diseases classified elsewhere. Instructional notes require the underlying disease or condition to be coded and sequenced first.

**Type**

Category H40 classifies the type of glaucoma into subcategories:

- H40.0 Glaucoma suspect
- H40.1 Open-angle glaucoma, which includes primary open angle glaucoma
- H40.2 Primary angle-closure glaucoma
- H40.3 Glaucoma secondary to eye trauma
- H40.4 Glaucoma secondary to eye inflammation
- H40.5 Glaucoma secondary to other eye disorders
- H40.6 Glaucoma secondary to drugs
- H40.8 Other glaucoma
- H40.9 Unspecified glaucoma

The diagnosis of "glaucoma suspect" describes a patient with borderline signs and symptoms of glaucoma, such as a suspicious-looking optic nerve, a borderline high intraocular pressure (IOP), and associated visual field deficits. Open-angle glaucoma is the most common type, affecting 70-80 percent of glaucoma patients. Resulting from diminished aqueous drainage caused by clogging of the trabecular meshwork on a microscopic level or some other unidentified process, persistent elevated IOP can lead to gradual loss of vision over time. Unfortunately, this process is insidious and patients often do not recognize that something is wrong until they are diagnosed with advanced disease. Conversely, closed-angle (acute) glaucoma results when the angle between the cornea and iris closes suddenly. With the aqueous fluid unable to enter the drainage pathway, the IOP quickly increases and patients can lose all vision in their eye in a short period of time.

**Stage**

Stage captures the extent of visual field loss and changes in the optic disc, which is the intraocular portion of the optic nerve that is visible on eye exam. Optic disc changes seen in glaucoma are thinning of the neuroretinal rim (outer aspect of the optic nerve containing nerve fiber/neuroretinal tissue) with corresponding enlargement of the cup (inner aspect of the optic nerve that contains no nerve fiber/ neuroretinal tissue).
Laterality
An assignment of right, left, bilateral or unspecified eye is included in most of the codes found in category H40.

To code glaucoma correctly, it is necessary to determine the type and stage of disease and how it is manifested in either or both eyes.

Guideline I.C.7.a.2—Bilateral glaucoma with same type and stage

When a patient has bilateral glaucoma and both eyes are documented as being the same type and stage, and there is a code for bilateral glaucoma, report only the code for the type of glaucoma, bilateral, with the seventh character for the stage.

When a patient has bilateral glaucoma and both eyes are documented as being the same type and stage, and the classification does not provide a code for bilateral glaucoma (i.e. subcategories H40.10, H40.11 and H40.20) report only one code for the type of glaucoma with the appropriate seventh character for the stage.

AHA Coding Clinic
2016, 4Q, 22 Glaucoma

Codes that specify bilateral conditions should always be reported when both eyes are affected. However, if no classification option for bilateral is available, and the condition affects both eyes, two codes may be assigned to report the condition specifying both the right and left eye. The majority of diagnosis codes include classifications for right, left, bilateral, or unspecified eye.

Practical Application for Guideline I.C.7.a.2

Case Study 5.1.
Low-tension glaucoma; not specified as to type and stage indeterminate in both eyes

Diagnosis Code(s):
H48.1234 Low-tension glaucoma, bilateral, indeterminate stage

Rationale:
In this example the patient has glaucoma of the same type and stage of both eyes; the bilateral code is used.
Guideline I.C.7.a.3—Bilateral glaucoma stage with different types or stages

When a patient has bilateral glaucoma and each eye is documented as having a different type or stage, and the classification distinguishes laterality, assign the appropriate code for each eye rather than the code for bilateral glaucoma.

When a patient has bilateral glaucoma and each eye is documented as having a different type, and the classification does not distinguish laterality (i.e. subcategories H40.10, H40.11 and H40.20), assign one code for each type of glaucoma with the appropriate seventh character for the stage.

When a patient has bilateral glaucoma and each eye is documented as having the same type, but different stage, and the classification does not distinguish laterality (i.e. subcategories H40.10, H40.11 and H40.20), assign a code for the type of glaucoma for each eye with the seventh character for the specific glaucoma stage documented for each eye.

Practical Application for Guideline I.C.7.a.3

Case Study 5.2.
A patient presents for an eye exam after spending years overseas in remote areas, without access to medical care. He presents today for assessment of persistent, worsening foggy vision, headaches, photophobia, and visual field disturbances. General eye examination with slit lamp and gonioscopy reveals glaucomatous findings. Ophthalmoscopy findings are consistent with chronic, bilateral primary angle closure glaucoma, mild disease in left eye with greater progression of disease in the right eye (moderate) and resultant ischemic neuropathy of the right optic nerve.

Diagnosis Code(s):
H40.2212 Chronic angle closure glaucoma, right eye, moderate stage
H40.2221 Chronic angle closure glaucoma, left eye, mild stage
H47.011 Ischemic optic neuropathy, right eye

Rationale:
Glaucoma is documented as the same type (chronic angle closure), but different stages in each eye. Assign the appropriate code for each eye rather than the code for bilateral glaucoma. The right eye is documented as moderate (seventh character 2) and the left eye, mild (seventh character 1).

Disease progression in the right eye has caused ischemic optic myopathy in that eye; report code H47.011.

Case Study 5.3.
A 75-year-old female patient was seen in the office for an eye examination that included a routine screening for glaucoma. She was found to have pigmentary glaucoma in both eyes, although the right eye (severe stage) was documented as being worse than the left eye (moderate stage).

Diagnosis Code(s):
H40.1313 Pigmentary glaucoma, right eye, severe stage
H40.1322 Pigmentary glaucoma, left eye, moderate stage

Rationale:
ICD-10-CM guideline I.C.7.a.3 states that bilateral glaucoma of the same type but different stages requires separate codes. Although the type is the same, two codes are needed in order to capture the particular stage of each eye since the classification distinguishes laterality.
H54 Blindness (I.C.7.b)

Blindness typically refers to vision loss that is not correctable with eyeglasses or contact lenses, and some people who are considered blind may perceive slowly moving lights or colors. Low vision refers to moderately impaired vision. People with low vision may have a visual impairment that affects only central vision or peripheral vision. Visual acuity and visual field are the two measurements used to assess vision. Visual acuity is the ability to see details (normal vision is 20/20) and visual field refers to peripheral vision (normal visual field is 180 degrees in diameter). Cataract, trachoma, macular degeneration, and glaucoma account for more than 70 percent of all blindness and low vision. Cataracts are not a disease, but a condition affecting the eye. Cataracts usually start as a slight cloudiness that grows more opaque. Light that does reach the retina becomes increasingly blurred and distorted. If left untreated, cataracts can cause blindness. Trachoma is caused by the bacterium Chlamydia trachomatis. It begins in childhood and repeated infections into adulthood irritate and scar the inside of the eyelid and, eventually, the cornea. Scarring on the cornea leads to vision loss. Macular degeneration is a disturbance of the retina and the leading cause of legal blindness in people older than 55 years of age. Glaucoma is a group of conditions related by optic nerve damage, predominantly as a result of elevated intraocular pressure (IOP). The pressure on the optic nerve affects peripheral vision and with glaucoma, central vision is affected as the disease progresses. Levels of blindness and low vision are classified by five different visual impairment categories:

Table 5.1. Visual Impairment Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Maximum less than, with best possible correction</th>
<th>Minimum equal or better than, with best possible correction</th>
<th>Classified as</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>• 6/18&lt;br&gt;• 3/10 (0.3)&lt;br&gt;• 20/70</td>
<td>• 6/60&lt;br&gt;• 1/10 (0.1)&lt;br&gt;• 20/200</td>
<td>Low vision</td>
</tr>
<tr>
<td>2</td>
<td>• 6/60&lt;br&gt;• 1/10 (0.1)&lt;br&gt;• 20/200</td>
<td>• 3/60&lt;br&gt;• 1/20 (0.05)&lt;br&gt;• 20/400</td>
<td>Low vision</td>
</tr>
<tr>
<td>3</td>
<td>• 3/60&lt;br&gt;• 1/20 (0.05)&lt;br&gt;• 20/400</td>
<td>• 1/60 (finger counting at one meter)&lt;br&gt;• 1/50 (0.02)&lt;br&gt;• 5/300 (20/1200)</td>
<td>Blindness</td>
</tr>
<tr>
<td>4</td>
<td>• 1/60 (finger counting at one meter)&lt;br&gt;• 1/50 (0.02)&lt;br&gt;• 5/300 (20/1200)</td>
<td>Only light perception</td>
<td>Blindness</td>
</tr>
<tr>
<td>5</td>
<td>No light perception</td>
<td></td>
<td>Blindness</td>
</tr>
<tr>
<td>9</td>
<td>Undetermined or unspecified</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Guideline I.C.7.b - Blindness

If “blindness” or “low vision” of both eyes is documented but the visual impairment category is not documented, assign code H54.3, Unqualified visual loss, both eyes. If “blindness” or “low vision” in one eye is documented but the visual impairment category is not documented, assign a code from H54.6-, Unqualified visual loss, one eye. If “blindness” or “visual loss” is documented without any information about whether one or both eyes are affected, assign code H54.7, Unspecified visual loss.

This guideline addresses how to code blindness or low vision when complete documentation indicating eye affected as well as visual impairment category is lacking. The following decision tree may be helpful in understanding the guideline.

Figure 5.2. Guideline I.C.7.b Decision Tree

Practical Application for Guideline I.C.7.b

Case Study 5.4.
Patient presents for left inguinal hernia repair; patient is blind which requires additional care. Code only the diagnoses.

Diagnosis Code(s):
K40.90    Unilateral inguinal hernia, without obstruction or gangrene, not specified as recurrent
H54.7    Unspecified visual loss

Rationale:
The reason for the admission is the hernia repair which is sequenced first, followed by a code for the blindness. Since no information if given regarding one or both eyes and no information is given about visual impairment, H54.7 is the appropriate code.
Beyond the Guidelines

H18.21 - Contact Induced Edema
Corneal edema (swelling) is caused by an inadequate oxygen supply to the cornea during extended contact lens wear.

Case Study 5.5.
A patient presents for evaluation with a watery, swollen, and reddened left eye. She is unable to insert her contact lens. The physician documents corneal edema due to contact lens.

Diagnosis Code(s):
H18.212 Corneal edema secondary to contact lens, left eye

Rationale:
The alphabetic index lists the main term “Edema” and subterms “cornea, secondary, due to contact lens” with H18.21-. The alphabetic index does not always provide the full code. A dash (-) at the end of an index entry indicates that additional characters are required, which must be selected from the tabular list as stated in ICD-10-CM guideline I.B.1. Subcategory H18.21 Corneal edema secondary to contact lens, is further subclassified according to laterality. The sixth character 2 identifies the condition as affecting the left eye. Do not report the “unspecified eye” code when the laterality is specified.

Spotlight
Note that other corneal disorders (other than edema) due to contact lenses are excluded from subcategory H18.21, and instead classified to H18.82 Corneal disorder due to contact lens.

H25-H28 Disorder of Lens
The lens of the eye is a nearly transparent (crystalline) biconvex structure that is suspended behind the iris. The function of the lens of the eye is to focus rays of light onto the retina. The most common condition affecting the lens is the development of cataracts. Cataracts are opacities that form within the lens and obscure vision. A far less common condition affecting the lens is dislocation or displacement.

AHA Coding Clinic
2016, 4Q, 142 Diabetic Cataract
2016, 2Q, 36 Diabetes and Associated Conditions, Clarification
2016, 1Q, 32 Bilateral Cataracts
Figure 5.3. Cataract

**Definition**

**cataract.** Clouding or opacities of the lens that stop clear images from forming on the retina, causing vision impairment or blindness. The classification and coding of cataracts are dependent upon size, shape, location, and etiology.

**Case Study 5.6.**

An adult male has an initial consultation with the ophthalmologist and is found to have bilateral cataracts due to asthma treated with prednisone.

**Diagnosis Code(s):**

- **H26.33** Drug-induced cataract, bilateral
- **T38.0X5A** Adverse effect of glucocorticoids and synthetic analogues, initial encounter
- **J45.909** Unspecified asthma, uncomplicated

**Rationale:**

A chronic respiratory disease, asthma is characterized by diffuse inflammation of the airways that results in exacerbations causing swelling and spasm of the airways. This, in turn, results in wheezing, dyspnea, coughing, and tightness in the chest. Although airway obstruction may resolve spontaneously, severe exacerbations often require the administration of systemic corticosteroids to reduce the inflammation. Probably the most common corticosteroid used for asthma is prednisone, although other similar drugs such as cortisone, dexamethasone, Medrol, Betnesol, and prednisolone may be provided. Unfortunately, a wide range of side-effects can occur, including cataracts.

ICD-10-CM classifies many types of cataracts of different etiologies. The sixth character indicates laterality; that is, whether the condition affects the right, left, bilateral eyes, or is unspecified. In this case, the cataract is due to the use of corticosteroids and is considered “drug-induced.” An instructional note directs the user to “use additional code for adverse effect, if applicable, to identify drug (T36–T50 with fifth or sixth character 5).” “Use additional code” notes are coding conventions in the tabular list that indicate that a secondary code should be added to report a condition in its entirety. ICD-10-CM guideline I.C.19.e.5.a states that “when coding an adverse effect of a drug that has been correctly prescribed and properly administered, [the user should] assign the appropriate code for the nature of the adverse effect followed by the appropriate code for the adverse effect of the drug.” A seventh character is required for all codes in category T38. The seventh character A reports an initial encounter in which the patient is receiving active treatment for the (acute) injury.
ICD-10-CM guidelines in section III provide instructions for reporting additional diagnoses. Since the patient's asthma is documented, the asthma should be reported as a secondary diagnosis as a coexisting condition that affects the care and management of the patient. With the specific type of asthma unknown in this scenario, and without mention of status asthmaticus or an acute exacerbation, the code for unspecified asthma, uncomplicated, would be appropriate.