### MEDICAL POLICY

**SUBJECT:** CORNEAL ENDOTHELIAL MICROSCOPY (SPECULAR MICROSCOPY) and FLUORESCEIN ANGIOGRAPHY

**POLICY NUMBER:** 9.01.03  
**CATEGORY:** Technology Assessment

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- If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply.
- If a commercial product, including an Essential Plan product, covers a specific service, medical policy criteria apply to the benefit.
- If a Medicare product covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.

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**POLICY STATEMENT:**

I. Based upon our criteria and assessment of peer-reviewed literature:

   A. Corneal endothelial microscopy is considered **medically appropriate** as a pre-operative test before intra-ocular surgery to identify patients at risk for postsurgical corneal decompensation.

   B. Corneal endothelial microscopy is considered **medically appropriate** in the diagnosis and management of patients with corneal dystrophies or other corneal abnormalities.

II. Based upon our criteria and assessment of peer-reviewed literature:

   A. Fluorescein angiography for use to investigate the retinal and choroidal vascular systems is considered **medically appropriate**.

   B. Fluorescein angiography for anterior segment use has not been medically proven effective and is considered **investigational**.

Refer to Corporate Medical Policy # 11.01.03 regarding Experimental and Investigational Services.

**POLICY GUIDELINES:**

The Federal Employee Health Benefit Program (FEHBP/FEP) requires that procedures, devices or laboratory tests approved by the U.S. Food and Drug Administration (FDA) may not be considered investigational and thus these procedures, devices or laboratory tests may be assessed only on the basis of their medical necessity.

**DESCRIPTION:**

**Corneal endothelial microscopy** (also known as specular microscopy and endothelial cell photography) is a technique used to assess the status of the corneal endothelium and cell counts of an individual’s cornea prior to surgical intervention to identify patients at risk for post-surgical corneal decompensation. The slit lamp is used to assess the status of the cornea and corneal endothelium. The specular microscope is used to provide a magnified view of a small area of corneal endothelial cell in order to measure and record endothelial cell counts of the cornea. This application is commonly used to evaluate the cornea prior to cataract surgery and is also used in patients with corneal endothelial dystrophies, iridocorneal endothelial syndromes, and to evaluate donor tissue for corneal transplantation.

**Fluorescein angiography** is a procedure that is used to study the status of the retinal and choroidal vascular systems. Fluorescein dye is administered intravenously and is followed by rapid-sequence serial photographs taken through the pupil. It is used to visualize and document retinal blood flow dynamics while recording the integrity of the inner blood-retinal barriers and the details of the retinal pigment epithelium. Its visible fluorescence on leaking from damaged vessels makes it particularly useful in the diagnosis of retinal vascular disorders and monitoring treatment of conditions amenable to laser photocoagulation. In the anterior segment it is used as a research tool in the evaluation of conjunctival, episcleral, corneal and especially iris blood vessels.
RATIONALE:
The U.S. Food and Drug Administration (FDA) regulates the sale of medical devices used in corneal endothelial microscopy, and has approved several models of these devices such as the Clinical Specular Microscope (Hai Laboratories, Soundbeach, NY) and the Konan Noncon Robo Pachy Specular Microscope (Konan, Inc., Hasbrouck Heights, NJ).

Published clinical evidence substantiates the efficacy and safety of corneal endothelial microscopy as a pre-operative test before intra-ocular surgery to identify patients at risk for post-surgical corneal decompensation, and in the diagnosis and management of patients with corneal dystrophies or other corneal abnormalities.

Published medical literature has provided evidence to support the use of fluorescein angiography to investigate the retinal and choroidal vascular systems but does not support the efficacy and safety of fluorescein angiography for anterior segment use.

CODES: Number Description

Eligibility for reimbursement is based upon the benefits set forth in the member’s subscriber contract.

CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.

Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.

Code Key: Experimental/Investigational = (E/I), Not medically necessary/appropriate = (NMN).

CPT: 92230 Fluorescein angioscopy with interpretation and report

92235 Fluorescein angiography (includes multiframe imaging) with interpretation and report, unilateral or bilateral

92242 Fluorescein angiography and indocyanine-green angiography (include multiframe imaging) performed at the same patient encounter with interpretation and report, unilateral or bilateral

92286 Anterior segment imaging with interpretation and report; with specular endothelial microscopy and cell analysis

92287 (E/I) Anterior segment imaging with interpretation and report; with specular endothelial microscopy and cell analysis; with fluorescein angiography

HCPCS: No code(s)

ICD9: 95.07 Eye examination; not otherwise specified

366 Cataract

371 Corneal opacity and other disorders of cornea

ICD10: A18.59 Other tuberculosis of eye

E08.36 Diabetes mellitus due to underlying condition with diabetic cataract

E09.36 Drug or chemical induced diabetes mellitus with diabetic cataract

E10.36 Type 1 diabetes mellitus with diabetic cataract

E11.36 Type 2 diabetes mellitus with diabetic cataract

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EFFECTIVE DATE: 03/30/00
REVISED DATE: 10/18/01
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E13.36 Other specified diabetes mellitus with diabetic cataract
H17.00-H17.9 Corneal Scars and Opacities (code range)
H18.001-H18.069 Other disorders of cornea (code range)
H18.10-H18.13 Bullous keratopathy (code range)
H18.20-H18.239 Unspecified corneal edema (code range)
H18.30-H18.339 Changes of corneal membrane (code range)
H18.40-H18.49 Corneal degeneration (code range)
H18.50-H18.59 Corneal dystrophies (code range)
H18.601-H18.629 Keratoconus (code range)
H18.70-H18.799 Other & unspecified corneal deformities (code range)
H18.811-H18.89 Other specified disorders of cornea (code range)
H25.011-H25.9 Age-related cataract (code range)
H26.001-H26.9 Other cataract (code range)
H28 Cataract in diseases classified elsewhere

REFERENCES:

KEY WORDS:
Corneal endothelial microscopy, Endothelial cell photography, Fluorescein angiography, Specular microscopy.

CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS

There is currently a National Coverage Determination (NCD) for endothelial cell photography. Please refer to the following NCD website for Medicare Members: http://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=213&ncdver=1&CoverageSelection=Both&ArticleType=All&PolicyType=Final&s=New+York+-+Upstate&CptHcpcsCode=36514&bc=gAAAAABAAAAA&.