

CORNEA PREFERRED PRACTICE PATTERN UPDATES



The latest evidence-based changes and recommendations.

BY DANIEL S. CHOI, MD

The American Academy of Ophthalmology Preferred Practice Pattern (PPP) committees meet annually and conduct an extensive revision of the PPP documents every 5 years on a fixed schedule. As a newer member of the Cornea and External Disease PPP Committee, I have been impressed by the transparency and rigor of the process. I have also enjoyed the opportunity to interact with a wide range of experts committed to making the PPPs as up-to-date and unbiased as possible.

Recently, our committee released the 2023 updated PPPs on six corneal topics, all of which are publicly available in the journal *Ophthalmology*.¹⁻⁶ These updates reflect an exhaustive review of the literature published in the past 5 years. They are sent for review to internal and external stakeholders, including patient advocacy groups, before being made public. By design, the PPPs do not necessarily include every new drug or technology—only those with high-quality evidence demonstrating efficacy. It is rare for a PPP to recommend a specific treatment; typically, the documents review all effective treatments for a particular disease state. The inclusion of new treatments is significant, however, because it indicates that these drugs and devices have met the rigorous standards of evidence required for inclusion in the PPP.

This article reviews some of the most significant changes in the latest cornea PPPs.

CORNEAL ECTASIA

The new Corneal Ectasia PPP includes numerous references to the efficacy of CXL, reflecting the procedure's rapid adoption for progressive keratoconus (KC) and other ectatic conditions since the US FDA approval of the iLink system (Glaukos). CXL has long been considered

the standard of care for KC outside the United States. The PPP explicitly states that CXL is the recommended treatment for progressive KC because the procedure stabilizes the cornea and reduces the risk of further progression. The PPP also highlights evidence that CXL is more cost-effective than a corneal transplant for both insurers and patients.

The PPP places greater emphasis on KC in children. Close follow-up is recommended for patients 17 years of age and younger and for those with corneas steeper than 55.00 D because they can experience faster disease progression than other patients with KC.

Early KC detection and treatment are crucial in young patients to maintain vision and prevent the need for corneal transplants. When patients in their 20s or 30s undergo corneal transplantation, the time line for the development of other conditions such as glaucoma and cataracts is accelerated, and there is a high chance that they will require repeat grafts over their lifetime, imposing significant financial and quality-of-life costs.

Other changes in the corneal ectasia PPP include mentions of the associations between KC and sleep apnea and high body mass index as well as the potential for visual rehabilitation with scleral lenses, technology that has advanced considerably in the past 5 years. The document notes that the definition of KC progression is open-ended, an acknowledgment that a universal standard is lacking.

DRY EYE DISEASE

New Treatment Options

Since the last update in 2018, several new medications for ocular surface disease have become available. These include perfluorohexyloctane ophthalmic solution (Miebo, Bausch + Lomb) for evaporative dry eye disease

(DED), varenicline nasal spray (Tyrvaya, Oyster Point Pharma/Viatrix) for DED, and lotilaner ophthalmic solution 0.25% (Xdemvy, Tarsus Pharmaceuticals) for *Demodex* blepharitis. The 2023 Dry Eye Syndrome PPP² incorporates these newer treatments based on high-quality randomized controlled clinical trials that supported their efficacy. Although the treatment options for DED have expanded, the PPP acknowledges that it is a complex, multifactorial disease and no single medication has been proven to be superior to others.

DED in Pediatric Patients

For the first time, the PPP acknowledges that DED can affect not only elderly patients but also pediatric patients. Increased time indoors and using screens have contributed to the rising incidence of DED in young adults and children.

Surgical Implications and Preoperative Management of DED

Another revision notes that DED can worsen after both keratorefractive and lens-based surgery but that preoperative treatment can mitigate this potential.

BLEPHARITIS

First US FDA-Approved Treatment

The blepharitis PPP now includes lotilaner ophthalmic solution 0.25% as a treatment for *Demodex* blepharitis. It is the first and only approved treatment for this condition. Topical antibiotic drops, ointments with or without corticosteroids, and oral antibiotics can also be effective.

In-Office Treatment Options

The updated PPP³ emphasizes that several in-office procedures for meibomian gland dysfunction are available but there is a lack of

▶ CORNEA

independent randomized controlled trial evidence to demonstrate the efficacy or superiority of any particular procedure.

CORNEAL EDEMA AND OPACIFICATION

Endothelial keratoplasty has replaced penetrating keratoplasty for endothelial failure because the former poses a lower risk of tissue rejection and is less likely to induce astigmatism. The updated PPP⁴ also mentions that the nerve growth factor agent cenergein-bkbj ophthalmic solution 0.002% (Oxervate, Dompé) can be effective in treating nonhealing epithelial defects in eyes with neurotrophic keratopathy.

CONJUNCTIVITIS

The new conjunctivitis PPP⁵ includes references to COVID-19– and Mpox-related conjunctivitis as well as the association between conjunctivitis and dupilumab (Dupixent, Sanofi/Regeneron). Patients with eczema or other atopic conditions treated with dupilumab may develop conjunctivitis. Cyclosporine

ophthalmic emulsion 0.1% (Verkazia, Harrow Health) is noted as a new therapy for vernal keratoconjunctivitis and is the only approved topical immunomodulator for this condition in both children and adults. Additionally, some medications for allergic conjunctivitis, such as olopatadine, are now available over the counter.

BACTERIAL KERATITIS

The literature on bacterial keratitis remains largely unchanged, but the updated PPP⁶ specifically highlights contact lens wear as the leading risk factor for microbial keratitis in the United States. Overnight wear, including orthokeratology for myopia control, is identified as a major risk factor for infection.

CONCLUSION

Ophthalmology is a rapidly advancing field, making it challenging for practitioners to keep up with the primary literature. The PPPs provide a broad overview of the latest treatment modalities, ensuring that ophthalmologists can offer

evidence-based care. Because the PPPs are available to the public, ophthalmologists should be aware of the content relevant to their practice areas. Although the PPPs offer general practice patterns, ophthalmologists should make personalized decisions based on their own settings and individual patient presentations. All PPPs may be accessed via the QR code. ■



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2. Amescua G, Ahmad S, Cheung AY, et al; American Academy of Ophthalmology Preferred Practice Pattern Cornea/External Disease Panel. Dry eye syndrome preferred practice pattern. *Ophthalmology*. 2024;131(4):1-49.
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4. Mian SI, Viriyya ET, Ahmad S, et al; American Academy of Ophthalmology Preferred Practice Pattern Cornea/External Disease Panel. Corneal edema and opacification preferred practice pattern. *Ophthalmology*. 2024;131(4):247-305.
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6. Rhee MK, Ahmad S, Amescua G, et al; American Academy of Ophthalmology Preferred Practice Pattern Cornea/External Disease Panel. Bacterial keratitis preferred practice pattern. *Ophthalmology*. 2024;131(4):87-133.

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