

APPENDIX 4 Regulations and Public Awareness

Challenges:

1. **Nearly 90% of *Acanthamoeba* Keratitis (AK) cases can be avoided but because it is severe and perceived as rare, avoidance techniques are not discussed.**

India has the highest number of new cases per year at 15.2 per million individuals, primarily due to farming accidents, where soil dwelling *Acanthamoeba* establishes infection in a damaged eye.¹ In high-income countries, over 85% of AK occurs in contact lens wearers.² *Acanthamoeba* attaches to or gets trapped behind the contact lens, generally through water exposure (such as during showering or swimming) or inadequate lens disinfection.³

2. **There is no mandatory reporting system for AK despite its severity.**

Three major AK outbreaks in contact lens wearers have occurred in the last 30 years and all were detected by researchers at large hospitals, but after a delay, as AK is rare.³ British Ophthalmic Surveillance Unit surveys were conducted for two of these outbreaks but after they had been contained. Similarly, this occurred with the Centers for Disease Control and Prevention (CDC) in the USA.

Recommendations:

1. Global Contact Lens Safety Week

AK is a largely preventable disease, if awareness of risk factors was greater. Research undertaken in 2016 by the UK's General Optical Council (GOC) found that 1 in 3 contact lens wearers were unaware of the risks of showering in lenses and 1 in 5 unaware of the risks of swimming in lenses. Attempts have been made to drive public awareness of contact lens safety through awareness campaigns, but these have not had widespread support and investment. An opportunity exists for a global collaborative effort to raise awareness, supported by all key actors across the system, from manufacturers to prescribers, those who treat infections and the patient community. Examples of successful campaigns include the adoption of an AK patient designed #nowaterwithcontacts symbol for contact lens packaging, removal of water imagery in contact lens promotions and health behaviour change programs (Figure 4)⁴ however these need to be universally adopted by contact lens manufacturers.



Figure 4. No Water Contact Lens Label

2. A real-time global monitoring system with AI, patient and clinical reports

While regulators have adverse event reporting systems, they are not tailored to patient reporting or eye infections. Furthermore, most AK cases in low-income countries are not medical device related. In this initiative, AI screening of X, Facebook and LinkedIn posts as well as active patients and clinician reporting in a custom app, would allow quick mobilisation to identify risk factors to decrease outbreaks/patient risks.

1. Zhang Y et al doi: 10.1016/j.jiph.2023.03.020; 2. Rayamajhee B, et al doi:10.1016/S2666-5247(21)00093-8; 3. Ilyas M, et al. doi: 10.3390/pathogens13020142; 4. Arshad M et al, doi:10.1038/s41433-020-1015-9