# INTEGRATION OF THE OPTOMED AURORA® IQ HANDHELD FUNDUS CAMERA IN THE SYDNEY EYE HOSPITAL EMERGENCY DEPARTMENT



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# Introduction

Junior doctors often:

- lack the confidence to use the direct ophthalmoscope.(1)
- do not use fundoscopy at all.(2)

## Results

The camera was used for 9 consults, with over 100 photos taken [Fig 1b, 2b]. • sent to subspecialty teams; vitreoretinal (n=4), cornea (n=3), trauma (n=2)

preferred device for anterior segment and corneal pathology [Fig 3a, 3b]

The Sydney Eye Hospital Emergency Department (SEH-ED) is:

- a quaternary referral centre for Ophthalmology.
- staffed by junior doctors who assess and manage patients, and who may not have the expertise in complex anterior and posterior segment pathology requiring them to contact senior clinicians after hours for remote consults or call backs.

This impacts diagnostic accuracy and timeliness of management, increasing the economic costs of unnecessary call backs for senior reviews.

The OPTOMED AURORA® IQ:

- portable non-mydriatic handheld camera.
- autofocus and auto exposure capabilities.
- captures both anterior and posterior segment pathology.
- ability to transmit images renders it useful for remote consults.

#### AIM

To evaluate whether integration of the OPTOMED AURORA® IQ handheld camera within the SEH-ED clinical workflow improved diagnostic accuracy and economic efficiency, by reducing the rate of senior clinician call backs.

• less uptake for posterior segment and optic nerve pathologies due to the choice of other devices on site, in particular, Optos.

The camera was particularly useful for capturing trauma cases [Fig 4, 5].

#### <u>Advantages</u>

- image clarity.
- ability to upload the images onto patient electronic records.
- improved communication to senior clinicians during consults.
- 2 diagnoses changed through use of the camera.

# A decrease in the number of call backs was not demonstrated.

Overall, average usefulness of the camera was rated 7/10.



## Methods

A data audit over a 1-month period at SEH-ED.

Patients requiring discussion with a senior clinician, in particular, for anterior segment, optic nerve and macular pathology were included.

A proforma was completed by the referring doctor, evaluating whether the diagnosis changed as a result of using the camera and whether a call back was eliminated.



Figures 3a and 3b: OPTOMED AURORA® IQ camera anterior segment photos under normal light (Figure 3a) and fluorescein staining (Figure 3b) demonstrating corneal neovascularisation and ciloxan deposition.

Figures 4 and 5: OPTOMED AURORA® IQ camera anterior segment photos in trauma cases, demonstrating iris trauma from a ruptured globe (Figure 4) and a penetrating eye injury with a metal stick (Figure 5).

#### Table 1: Evaluation of the Optomed Aurora® IQ Fundus Camera

Advantages	Disadvantages	
<ul> <li>Portable</li> <li>Low upfront cost</li> <li>Anterior and posterior segment imaging</li> <li>No mydriasis needed</li> <li>Autofocus and auto exposure capabilities</li> </ul>	<ul> <li>Limited peripheral view of the retina</li> <li>Multiple other imaging modalities at Sydney Eye Hospital</li> </ul>	
<ul> <li>Image clarity</li> </ul>	<ul> <li>Did not decrease the</li> </ul>	

Figures 1a and 1b: Comparison between an existing slit lamp camera (Figure 1a) and the portable OPTOMED AURORA® IQ camera (Figure 1b) for anterior segment imaging in a normal eye

**Figures 2a and 2b:** Comparison between the Visucam (Figure 2a) and the portable OPTOMED AURORA® IQ camera (Figure 2b) for fundus photography

	Integration with electronic medical records	number of call backs
•	Artificial intelligence capabilities	
•	Improved clinical communication	
•	Useful in trauma cases	

# Conclusion

The OPTOMED AURORA® IQ camera is a **useful adjunct** to clinical diagnosis and management. As multiple alternative imaging modalities are available at SEH-ED, the camera had greatest utility in **ocular trauma**. The camera may also have increased uptake at **peripheral or rural hospitals** where remote consults form a key tenet of patient assessment and management.



#### References

1. Schulz C, Hodgkins P. Factors associated with confidence in fundoscopy. Clin Teach. 2014 Oct;11(6):431-5.

2. Dunn HP, Kang CJ, Marks S, Dunn SM, Healey PR, White AJ. Optimising fundoscopy practices across the medical spectrum: A focus group study. Plos one. 2023 Jan 27;18(1):e0280937.