Conflict of interest

The authors declare no conflict of interest.

Study group investigators

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References

- 1 Rehak M, Hollborn M, Iandiev I, Pannicke T, Karl A, Wurm A *et al.* Retinal gene expression and Müller cell responses after branch retinal vein occlusion in the rat. *Invest Ophthalmol Vis Sci* 2009; **50**: 2359–2367.
- 2 Stefansson E. The therapeutic effects of retinal laser treatment and vitrectomy. A theory based on oxygen and vascular physiology. *Acta Ophthalmol Scand* 2001; **79**: 435–440.
- 3 Spaide RF. Prospective study of peripheral panretinal photocoagulation of areas of nonperfusion in central retinal vein occlusion. *Retina* 2013; **33**: 56–62.
- 4 Campochiaro PA, Sophie R, Pearlman J, Brown DM, Boyer DS, Heier JS *et al.* Long-term outcomes in patients with retinal vein occlusion treated with ranibizumab: the RETAIN study. *Ophthalmology* 2014; **121**: 209–219.
- 5 Campochiaro PA, Hafiz G, Mir TA, Scott AW, Solomon S, Zimmer-Galler I *et al.* Scatter photocoagulation does not reduce macular edema or treatment burden in patients with retinal vein occlusion: the RELATE Trial. *Ophthalmology* 2015; **122**: 1426–1437.

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Sir,

The Edinburgh diagnostic algorithms: a freely available validated resource for non-ophthalmologists

We would like to draw the author's attention to the recent articles published in *Eye*, which describe the diagnostic accuracy of A&E doctors and other non-ophthalmologists when faced with patients who present with three of the most common ophthalmic presentations: red eye,¹ visual loss² and diplopia.³ These articles go on to describe and validate diagnostic algorithms for each presenting symptom that significantly improve the diagnostic accuracy of these non-specialists.

We found a baseline diagnostic accuracy of 51% for patients with visual loss (optometrists 67%, A&E doctors

33%, GPs 13%, and other hospital doctors and nurse practitioners 0%) and a rate of 24% in patients with diplopia (A&E doctors 38%, GPs 28%, and optometrists 13%). There was no baseline diagnostic accuracy quoted in the 'Red Eye' paper, which is one of the paper's weaknesses, however, a study from 1996 was quoted, describing a diagnostic accuracy in patients with acute angle closure glaucoma 21% from GPs and 64% from casualty officer.⁴ The overall diagnostic accuracy of The Red Eye Algorithm is 72%, which rose to 76% when only the most serious causes (acute angle-closure glaucoma, iritis, and keratitis) were analysed. Diagnostic accuracy using The Visual Loss Algorithm improved from 51 to 84% and while using The Diplopia Algorithm from 24 to 82%.

Ah-kee *et al* recommend organisational changes to improve ophthalmic training and supervision to non-ophthalmic doctors nationally, which would require considerable investment of manpower and funding.⁵ Although desirable, in a National Health Service where limited resources are spread thinly across every specialty these recommendations may be unrealistic. The Edinburgh Diagnostic Algorithms offer a freely accessible, immediately available, validated solution to this problem that will improve referral from primary care to ophthalmology and ultimately improve patient care.

The Edinburgh Diagnostic Algorithms are freely available online at <https://www.eemec.med.ed.ac.uk/pages/resources/mw-ophthalmology-page>.

Conflict of interest

MW has received minimal royalties from the sales of 'Ophthalmology Pocket Tutor' where the algorithm has been published. The remaining authors declare no conflict of interest.

References

- 1 Timlin H, Butler L, Wright M. The accuracy of the Edinburgh Red Eye Diagnostic Algorithm. *Eye (Lond)* 2015; **29**: 619–624.
- 2 Goudie C, Khan A, Lowe C, Wright M. The accuracy of the Edinburgh Visual Loss Diagnostic Algorithm. *Eye (Lond)* 2015; **29**: 1483–1488.
- 3 Butler L, Yap T, Wright M. The accuracy of the Edinburgh diplopia diagnostic algorithm. *Eye (Lond)* 2016; e-pub ahead of print 18 March 2016; doi:doi:10.1038/eye.2016.44.
- 4 Siriwardena D, Arora AK, Fraser SG, McClelland HK, Claoue C. Misdiagnosis of acute angle closure glaucoma. *Age Ageing* 1996; **25**: 421–423.
- 5 Ah-Kee EY, Scott RA, Shafi A, McCabe G, Lim LT. Are junior doctors in today's NHS competent in managing ophthalmic cases in the emergency department? *Eye* 2016; **30** (1): 164.

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