



Graham O'Regan finds a way to use an Apple iPhone for imaging when on domiciliary visits

Imaging on the go

It's true to say that customised acuity testing, supra-threshold visual fields and tonometry have been routine domiciliary best practice for many years now. However, the ability to perform digital retinal photography has historically been problematic.

When the Welch Allyn Panoptic ophthalmoscope was introduced some years back, I spent some time trying to adapt it for use as a hand-held fundus camera, using a Sony digital camera attached to the eyepiece and fibre optic cables to generate the required flash (Figure 1).

The results were disappointing as the arrangement had many limitations; however, the occasional successful fundus photo showed the potential of using the Panoptic for retinal photography.

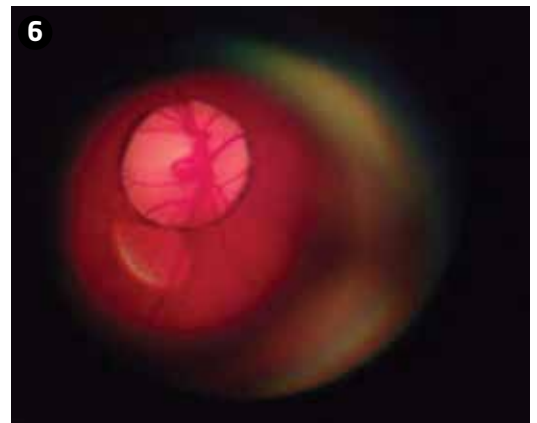
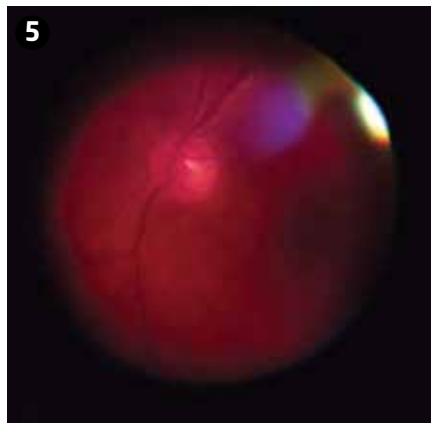
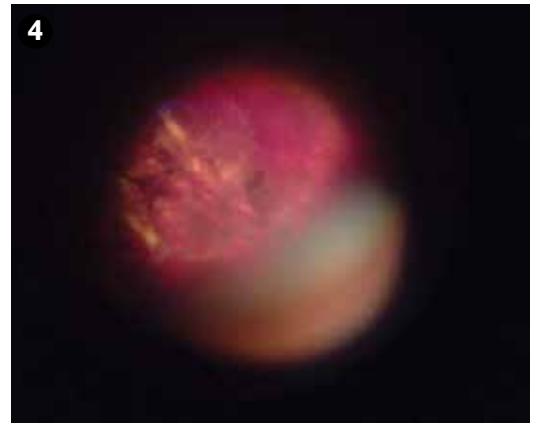
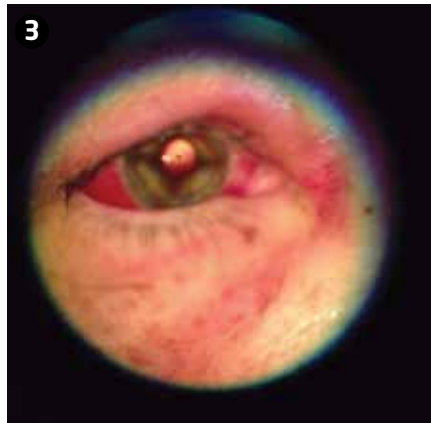
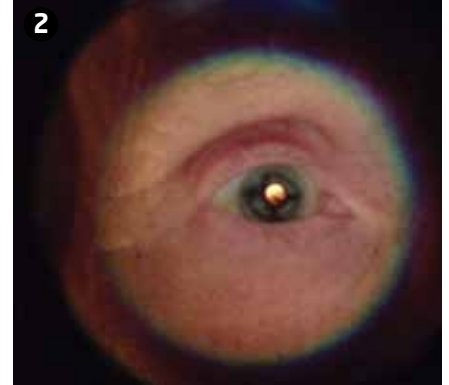
Welch Allyn has recently made available the iExaminer, which addresses all the problems of my own crude attempt. The iExaminer bracket is constructed to precisely locate the Panoptic eyepiece, and slot in place an Apple iPhone 4 or 4S (note: the iPhone 5 will not fit).

The required software is a free download from Welch Allyn; for additional cost, patient record software can be purchased; however, I would not recommend this option (see later).

In use, the iExaminer system takes practice to obtain good results, even if you are a previous Panoptic user. Good instructions and an online video are available from Welch Allyn.

Settings provide for standard or high resolution photography. Routinely, low is probably best as it increases the chance of obtaining a good photograph, as over 100 photographs are taken in a matter of seconds, whereas 'only' 15 or 20 are taken in hi-res mode. Once the photos are taken you have the option of saving to a patient file, using the aforementioned software, or saving to camera roll. Entering patient details on the iPhone is slow and fiddly; the method I use is to start with a quick photo of the patient's record card or GOS form which instantly records all their details. The use of a stylus is strongly recommended for selecting photographs on the iPhone.

At the end of the day, the photos can



be reviewed and emailed to yourself for filing – a quick and simple process. It is a good idea to create a dedicated email account for the purpose, and delete from your iPhone once sent, otherwise you will soon end up with hundreds on your phone's camera roll!

Interestingly, it is possible to obtain photographs when sometimes it is not possible for various reasons with a desk-top camera. Also, the method is very versatile, allowing photographic records of cataract,

vitreous muscae, external eye disease and so on (Figures 2-6).

Dilate or not dilate? It is nearly always possible to get a result without dilatation, but as always a better result will be obtained following dilatation. It is often necessary to reduce the illumination when dilating, to reduce light scatter and reflections.

Could a portable OCT be next? ●

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