

## **EFOCUS PHASE 2: A RANDOMISED CROSSOVER TRIAL OF SMARTPHONE & DIRECT FUNDOSCOPY FOR MEDICAL STUDENTS**

**Purpose:** Fundoscopy is performed infrequently outside of ophthalmology and neurology. These examinations can facilitate a screening and diagnosis, assisting in triage and referral. The decline in fundoscopy has been ascribed to technical examination challenges and difficulty interpreting results. We hypothesise that capturing fundus photos using smartphones would minimise these challenges and increase clinical use.

**Methods:** 38 second and final-year medical students participated. They accessed a fundus interpretation eLearning course, and were exposed to three devices for fundoscopy: direct ophthalmoscopy; and two smartphone adaptors: the Panophthalmoscope-iExaminer, and D-eye. They completed examinations on simulators and patients, with a crossover between smartphone and direct fundoscopy. Following they were surveyed on: preferred technique for fundoscopy; confidence; and ease of viewing the fundus. Further sessions with another 90 students are pending. Data analysis used one-sample t-test, binomial test, and Wilcoxon signed-rank test.

**Results:** 32 students (84.2%) completed the post-workshop questionnaire. Clinical interpretation results are pending. Overall, students responded favourably to smartphone-assisted fundoscopy (SF) over direct ophthalmoscopy (DO). 75% preferred SF over DO ( $p = 0.007$ ), Confidence levels viewing fundus on a 1-5 Likert scale (1 being least confident) was 3.500 (95% CI [3.17-3.83]) for SF vs 3.031 (95% CI [2.69-3.37]) for DO ( $p = 0.037$ ). Ease of viewing fundus was 3.469 (95% CI [2.14-2.80]) for sSF and 2.844 (95% CI [2.49-3.20]) for DO ( $p = 0.037$ ).

**Conclusion:** Smartphone-assisted fundoscopy enhances medical students confidence in fundus examinations and allows easier fundus viewing. Further studies will determine how this translates to long-term clinical use.