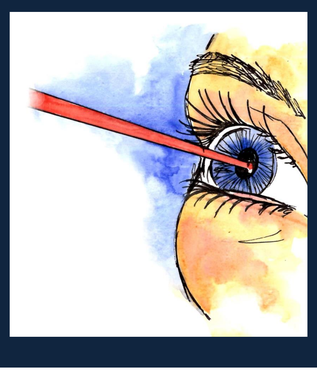


Quality Improvement in Laser Treatment

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INTRODUCTION

In 2017 – 2019, Professor Peter Scanlon won International Association for Prevention of Blindness innovation awards to develop Quality Improvement in Laser Treatment (QUILT) laser training. This combined an e-learning course, a downloadable installation tool, and development of printed artificial retinas on thermal paper within artificial eyes to support practical skills training in retinal laser treatment, devise treatment plans and provide mock laser treatment tools. QUILT was presented at the Royal College of Ophthalmologists to London trainees in 2019, with feedback of 14/18 (77.8%) very good, 3/18 (16.7%) good, and 1 no response. In 2020, Professor Scanlon conducted 5 QUILT Zoom Train the Trainer sessions and 5 courses for trainees.

PURPOSE

To improve the quality of laser treatment by providing adequate training in retinal laser application and treatment. Two key areas of importance are:

1. Eye-doctors servicing poorer communities have received training in anterior eye examination and cataract surgery but very little training in diabetic retinopathy and laser treatment.
2. The approval of drugs and intravitreal injection therapies as treatment for, and the management of, diabetic retinopathy has lead to a reduction in the need for laser treatments, particularly macular laser treatments, leaving doctors in higher income countries struggling to gain adequate experience in appropriate laser application.

METHODS

Training comprises of:
Pre-requisite completion of e-learning in the following areas:

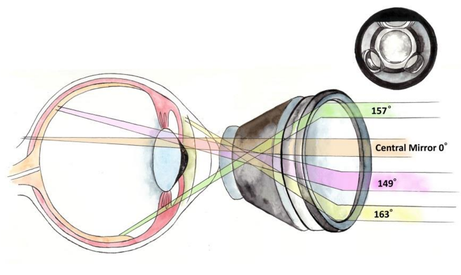
- Physical and biological properties of lasers
- Laser safety
- Laser machines in ophthalmology
- Choice of laser lenses
- Laser treatment of proliferative diabetic retinopathy
- Laser treatment of diabetic maculopathy

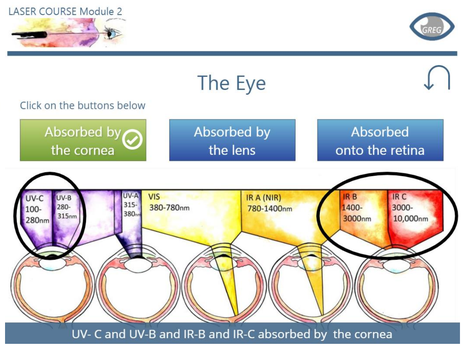
QUILT Laser Simulation training session delivered either virtually via Zoom or face to face. Simulation training includes:

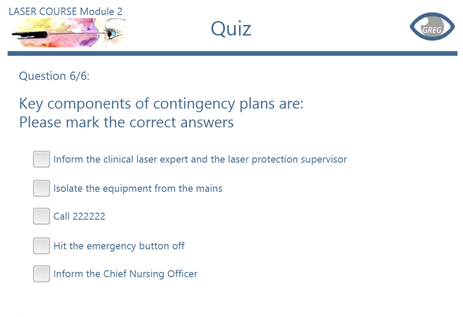
- Choices of laser and contact lens, laser power and spot size, spot pattern and spacing, viewing magnification
- Guidance on laser application
- Guidance on selecting appropriate treatment plans
- Discussions with peers on patient cases and appropriate treatments (either face to face or in breakout rooms on Zoom)

The combined disciplines enables trainees to practice online, on cases with different underlying pathologies, using the laser simulation tool, and gain the knowledge and skills required to produce higher quality and appropriate laser treatments on real patients

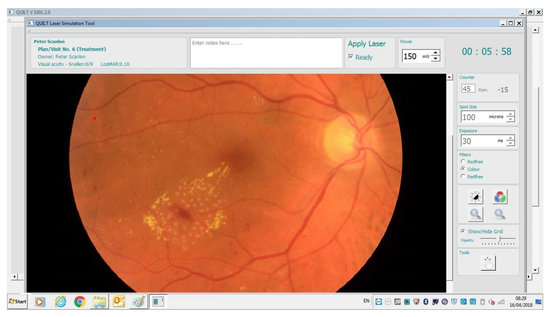
E-LEARNING COURSE

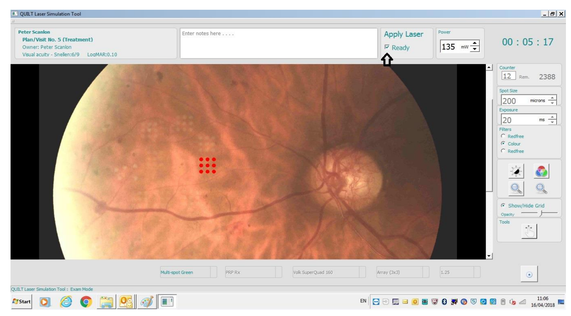






QUILT SIMULATION TOOL





ARTIFICIAL EYES







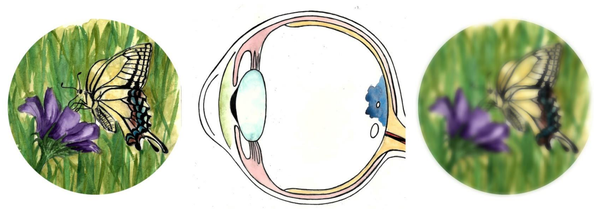
RECENT VIRTUAL EVENTS

Severn Deanery Trainees, Bristol

16 trainees attended the session and completed the e-learning
6 trainers supervised the session and provided support
Professor Scanlon provided train the trainer sessions prior to this

London Ophthalmology Trainees

32 trainees attended the session and completed the e-learning
5 trainers supervised the session and provided support
Professor Scanlon provided train the trainer sessions prior to this



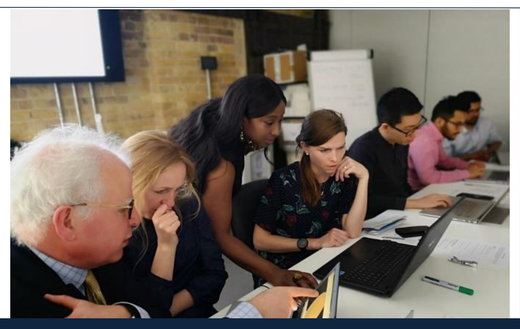
RESULTS

Trainees have successfully demonstrated the principles of treatment of proliferative diabetic retinopathy, maculopathy and retinal tears using the simulation tool. 100% of the London Ophthalmology Trainees completed and successfully passed a final summative assessment. All London trainees who completed feedback forms (17/32) rated the session either a 4 or 5 on the scale of 1-5, with 4 being helpful and 5 being very helpful. Written feedback included '*best course I've been to since starting training*'; '*The Quilt system was amazing and the fact we had small groups with a consultant trainer helping and giving us personal advise was amazing';* and *'pre-reading material was very informative'.*

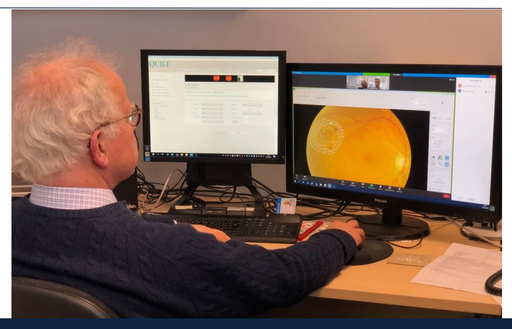
CONCLUSION

The blended learning approach this training offers is an innovative way to train ophthalmologists in the theory and practice of retinal laser treatment both in the UK and overseas.

The regional accessibility of the QUILT software and train the trainer sessions enables trainers to supervise trainees within their local area,



Face-to-face training



Online training via Zoom