

Education and Training Department Simulation Training in the UK

Overview:

Training physicians and surgeons has changed from see one, do one, teach one, to see one, practice many (*simulation*), do many, and teach more than one (including in simulation). The main goal of simulation training is to have a competent surgeon who can provide a safe, quality, cost-effective, and efficient surgical service.

The UK has been at the forefront of introducing and developing simulation equipment and opportunities, during training, for a number of years. Schools of Ophthalmology throughout the UK have introduced various forms of simulation training for their trainees. Starting with the initial compulsory Microsurgical Skills course for all trainees, simulation is now throughout training. The Curriculum Lead with the Simulation Group of the Education Committee produced a Curriculum of the various surgical skills that can be achieved through simulation training in 2015.¹

Moving forward, the Curriculum Sub-committee were able to introduce the requirement for many surgical skills to be “practised in a supervised simulated environment” into surgical learning outcomes, having submitted this to the GMC. The College is keen to continue to develop simulation so that it can be mandatory for areas of the OST curriculum. To be able to mandate this the GMC will require evidence that simulation is universally available to trainees and training units.

A Simulation Lead has been appointed as an ambassador for simulation at all levels of medical education. The aim of the Lead is to co-ordinate the delivery of and to facilitate the development of further simulation. Over time this will involve the rolling out of simulation programmes for all Ophthalmic Trainees.

Types of simulation:

Simulation can be broadly divided into six subgroups.

1. **Microsurgical Skills Course** – These courses are well established and are run at the College at the state-of-the-art Skills Centre. It is *mandatory* for all UK ophthalmic specialist trainees to complete a College run Microsurgical Skills Course before undertaking intraocular surgery.
2. **ST1 Induction** – The College has produced detailed guidance on the recommended induction for ophthalmology for those entering ST1. It is expected that trainees will practice basic examination skills and that opportunities for practical sessions and particularly simulation will be included. This should include the sign off of basic competencies in simulation to facilitate the sign off in real life scenarios earlier in training. Examples include: practicing removal of a corneal foreign body or undertaking a corneal scrape can be performed in simulation. Introduction to the EyeSi simulator, cataract surgery in wet/dry labs, suturing practice and wound construction can be included.

Simulated eyes for ocular ultrasound practice could be developed, as used in one region currently.

3. **Laser** – A few regional Schools have already been running Laser Simulation courses. It is relatively easy to set up and various model eyes available in the market for this purpose.² It is also possible to make some of these practice models at home. The courses can be held in any Eye unit, where there is a Laser Suite with all the different types of Laser machines. It would be appropriate for a Laser Simulation Course to be undertaken in all regions. It should be possible to roll this out throughout the regions, from the centres with experience, with a number of standardised components and resources, simulating both posterior and anterior segment laser techniques. This would be aimed at all new trainees but could also be considered for all trainees in a region to refresh techniques where necessary.
4. **Intraocular Simulation** – The list of intraocular surgical skills that can be simulated in a wet lab has been growing steadily as newer model eyes are becoming available in the market. Perhaps the first area to address would be to ensure that all regions could ensure their trainees practiced the management of cataract surgery complications, particularly capsule rupture and vitreous loss. The Phillips Studio eye facilitate this with the use of egg white to represent vitreous.

This would have a number of potential benefits (a) to ensure junior trainees were familiar with the steps required and should be more likely to be able to manage their complications earlier in training; (b) to give senior trainees the opportunity to demonstrate that they can manage such complications, particularly as the rate of vitreous loss is normally lower for more experienced trainees, so they may have little opportunity to demonstrate this. Potentially more junior trainees will not have had the opportunity to perform an anterior vitrectomy as their trainer may have taken over the case. This should allow trainees to demonstrate they have the appropriate skills as required by the curriculum and instil confidence. It is also an opportunity to practice supervision of these techniques.

As this is undertaken in some units these areas of good practice could be the exemplars to roll out a programme across all units.

These skills would also be appropriate for all ophthalmic surgeons. They would be of particular benefit for those returning to work after time out of programme, a career break, illness, maternity leave etc. Increasingly dry and wet lab experience before commencing new surgical techniques is appropriate for all grades of surgeons.

5. **Communication Skills** – The GMC has recently published the Generic Professional Capabilities Framework³ (GPC) which stresses the importance of good communication and interpersonal skills and dealing with complexity and uncertainty. This supports our own curriculum outcomes. It is expected that every trainee should demonstrate evidence of these skills, whilst maintaining appropriate situational awareness, professional behaviour and judgement. Simulation is also important for practising these skills as it can allow feedback and development in a supportive environment. This can be developed in a low tech way initially with sharing scenarios and techniques for set up. The Lay Group members have recently written scenarios to help set up a bank for all trainers to use.

6. ***Situational Awareness/immersive simulation*** – While some aspects of this will overlap with the communications skills and intraocular skills courses, hands on simulation training on how to handle situations which happen rarely such as PC rupture is of immense importance so that the acute situation is handled appropriately for the best possible outcome to the patient. Some regions have already been running simulation training for PC rupture, which includes situational awareness, and may be used for the wider theatre team, for example, and these examples could be rolled out. It is envisaged that this area would be developed more in future as techniques for practicing immersive simulation that are more affordable and more practical, are developed in other medical specialties too.

References:

1. <https://www.rcophth.ac.uk/wp-content/uploads/2015/06/Surgical-Skills-Simulation-for-the-curriculum-Fiona-Spencer-July-2015.pdf>
2. <http://www.aurolab.com/retieye.asp>
3. <http://www.gmc-uk.org/education/postgraduate/GPC.asp>

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