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Conflict of interest statement:

The authors have declared that there are no conflicts of interest.

Provenance and peer review:

Commissioned and internally reviewed.

To cite:

Russell S, Vernon S, Tallantyre E. ACNR 2015;15(4):18-19.

Next Generation Neurology: E-learning

The Association of British Neurologists Trainees Innovative E-Learning Programme: aiming to promote confidence and engagement with neurology prior to specialisation.

Background

The term neurophobia, coined by Ralph Jozefowicz in 1994,¹ refers to a fear of neurology encountered amongst medical students. A recent national survey of UK medical students confirms that students continue to find the subject of neurology and the ability to draw up a neurological differential diagnosis significantly more difficult compared with other specialties.² We have recently conducted a survey of 108 Foundation and Core Medical Trainees (CMT) from 19 deaneries across the United Kingdom. Results revealed that 48% describe themselves as being neurophobic, therefore demonstrating that neurophobia is not just confined to medical students. Overall, 78% felt they were under-confident managing neurological conditions that may present on the acute medical take (self-rated confidence level of two or less on a four point scale). Thematic analysis of free text responses from the 52 self-identified neurophobes highlighted three areas of particular concern: lack of clinical exposure and experience during medical school and/or early training, lack of skill base to effectively elicit clinical signs and form differential diagnoses, and a perception of neurology being a complicated speciality requiring expert support and rapid speciality takeover. [Unpublished]

The Association of British Neurologists (ABN) continues to play a key role in campaigning for disorders of the nervous system to feature centrally on UK undergraduate curricula.⁶ Recent evidence from the USA supports the premise that undergraduate exposure to teaching of the neurosciences correlates directly with the likelihood of medical graduates subsequently enrolling in a neurology specialist training programme. The competition ratio for ST3 neurology applications has been relatively stable over the last three years,³ but with typical rates of around two applications per post, there is room for improvement if we seek to expand our specialty. A recent article in the BMJ highlighted the urgent need to expand neurology services in the UK, given that there is only one neurologist per 90,000 people (compared with a European average of one per 15,000), and an estimated 12 month wait for outpatient neurology services.⁴ As it stands in the UK at present, we must acknowledge that a high proportion of the one in five patients who present to the acute take with a disorder of the nervous system, are not received by a Neurologist.⁵ Their initial management tends to be provided by junior doctors on an acute medical unit, the same population

who our survey suggests feel under-confident or neurophobic.

It seems that the neurology training needs of junior doctors are not being fully met by current teaching methods during medical school or junior training posts. Long term solutions to this problem (e.g. adapting medical school curricula, increasing the number of neurology posts in junior rotations) seem largely to be no more than theoretical pledges at present. The ABN and ABN Trainees (ABNT) committees remain committed to try to bridge this gap. Launched one year ago, the ABN Mentor Scheme provided 40 aspiring Neurologists, currently in junior training posts, with the opportunity to be mentored by a local Neurologist or neurology trainee.¹² However, the ABNT feel that further initiatives are required to maintain engagement and recruitment into neurology.

E-learning

E-learning, defined as 'learning conducted via electronic media',⁷ has been traditionally used to deliver distance-learning and computer assisted instruction.⁸ E-learning formats for the delivery of medical education range from plain electronic text, to wholly interactive, virtual reality platforms. The World Health Organization (WHO) recently commissioned a review of evidence for e-learning in healthcare, conducted by Imperial College London. The findings suggested that e-learning resources should complement, rather than replace traditional learning methods for teaching healthcare professionals,⁹ but that e-learning enhances the convenience and accessibility of educational resources. Student satisfaction appears to be higher for e-learning than for traditional learning methods and data exists to validate e-learning as a means of improving test-scores.⁹ In our survey of Foundation and core medical trainees, only 24% report using interactive e-learning resources to revise for professional exams. The remainder predominantly cited lack of availability, and cost of available resources as reasons for not utilising interactive e-learning cases as a revision tool. In addition to the Medical Royal College of Physician (MRCP) exam cost of £1,495, our survey indicated that 50% of junior doctors spent an additional £100 or more on revision resources. [Unpublished] We suggest that a lack of freely available, open access neurology resources further inhibits motivation to dedicate revision time to the speciality.

Student-centred Learning

Developing a comprehensive, evidence-based, curriculum-centred online learning resource for junior doctors represents a significant challenge. While a range of subscription-based online question banks for MRCP exams exist, we endeavoured

to generate a non-profit, open-access resource. Evidence from undergraduate practice shows that asking students to write their own exam-style questions, and to review and respond to those of their peers, can be a hugely successful way of encouraging learning.¹⁰ The Peerwise initiative (<https://peerwise.cs.auckland.ac.nz>) had high rates of student uptake and generated large volumes of formative learning material. This demonstrates how valuable learning resources can be developed without the need for high-level investment from time- and resource-poor departments. Interestingly, the students also reported that they found the process of question writing, answering and commenting on peers' questions to be a useful learning technique.¹⁰

Innovative e-learning

When authors ET and SV were paired as ABN mentor and mentee, we, along with a colleague (SR), decided to embark on a project that collaborated with the ABNT to enhance neurology training for junior doctors, and to offer an opportunity to engage with neurology ahead of specialisation. We suggest that the enthusiasm of junior doctors who are already interested in neurology can be employed in this project to develop a resource that is relevant and accessible to any junior doctor, regardless of their specialist interest. We have devised an innovative and interactive e-learning programme that will cover all neurology outcomes of the CMT curriculum through a series of 20-30 modules. Learning modules will be developed around clinically relevant scenarios that we expect junior doctors to face in their current medical practice. Our e-learning modules will utilise a basic and accessible computer format (PowerPoint) and will require participants to prioritise patients and combine academic knowledge with clinical acumen, principally through single best answer questions.¹¹

So far, 23 topics have been allocated to junior doctors who will work in conjunction with a senior neurology mentor. The project will be led by the junior colleague, who will research the topic and devise a module that simulates an on-call shift, ward or outpatient clinic experience, dealing with neurology based presentations. The role of the neurology mentor will be to aid learning, highlight relevant resources and to ensure clinical accuracy. Once the e-learning module material is received by the Innovative E-learning team, it will be sent for further peer-review by one of the ABNT committee, before it is transformed into an e-learning format and uploaded to the ABNT website (www.abnt.org.uk/elearning.php). E-learning modules will be freely available for individuals or as a teaching resource worldwide, with accreditation given to the contributors.

Lack of maintenance to e-learning sites has been cited as an obstacle to the longevity of open-access online teaching resources. In fostering a supportive mentoring ethos we would expect that the management of each case will be passed down through generations of junior mentees, further facilitating ongoing learning and supervision in the speciality.

Summary

We envisage that the ABNT Innovative E-learning project will provide a comprehensive, interactive e-learning platform for junior doctors to access free of charge. In developing this programme as a grassroots initiative we hope to achieve sustainability, and motivate junior doctors to feel confident managing acute neurological disorders and consider neurology as an inspiring and supportive speciality.

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COST
Consultant and associate specialists: **£195** for two days OR **£145** per day; Clinical trainees and research fellows: **£135** for two days OR **£85** per day; **£55** for half day on Wednesday only

For further details please contact:
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