

Does focused and dedicated teaching improve the confidence of GP trainees to diagnose and manage common acute ENT pathologies in primary care?

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Background: General practitioners (GPs) are key members of the health care profession who are required to have a considerable breadth of knowledge to manage and treat patients effectively in the community. Their skills and experience varies depending on the medical school they attended and their foundation training and specialist GP training schemes. Exposure to ear, nose, and throat (ENT)-specific pathology is often insufficient due to the lack of formal otolaryngology rotations, minimal relevant teaching opportunities, and inconsistencies in curricula, despite ENT-related pathology presentations being one of the commonest consultations in primary care.

Methods: We undertook a learning needs assessment among Watford general practice vocational training scheme trainees to assess whether they lacked confidence in managing typical ENT pathology, as well as to ascertain whether they felt a formal and focused ENT teaching session would be beneficial to them.

Results: The results suggested they were interested in such a session, and therefore we organized a formal program on the assessment and management of acute and common ENT pathologies with a postteaching questionnaire to evaluate participant confidence in these domains. The results showed an improvement in participant knowledge and confidence regarding the assessment and management of ENT pathologies following the teaching session intervention. In addition, most attendees were overall very satisfied with the session.

Conclusion: This study highlights the need for teaching specifically tailored to the learning needs of general practice vocational training scheme trainees, particularly in niche specialties, in order to prepare them adequately for clinical practice in the community setting.

Keywords: medical education, ENT surgery, GP training, training competence, primary care, GP education

Introduction

GP curriculum and ENT

In the United Kingdom, primary care services manage almost 300 million consultations per year, a significant proportion of which involve patients suffering from ear, nose, and throat (ENT) problems.¹⁻³ It is estimated that in around a quarter of adults, and half of pediatric consultations, the primary presenting complaint is ENT related, making it one of the most prevalent groups of pathologies seen by general practitioners (GPs).²⁻⁴ The scope of practice of ENT surgery as a specialty is very broad, ranging from life-threatening emergencies and complex cancers to a multitude of benign diseases, of which many ultimately affect the patient's quality of life.⁵ Socioeconomic factors such as

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an aging population and an increasing prevalence of chronic disease, impact on all aspects of medicine – including ENT – and affect the type of health care we can provide, especially in the primary care setting.⁶ As a result, it is important that current, trainee, and future GPs are competent in the assessment and management of common acute ENT pathologies.

Confidence and competence – the link to teaching and training

Weekly teaching sessions for trainee GPs are often a core part of their training program. It is usually compulsory for them to attend each week, and they do not need to sign up in advance for sessions; however, a minimum attendance rate of 70% is expected per annum.⁷ ENT is a formal and central part of the GP training curriculum, as set out by the Royal College of General Practitioners.⁸ However, many studies have highlighted a marked lack of confidence in this specialty among medical students and junior doctors (including GP trainees). There are three stages in the medical education training pathway where ENT is taught – as a medical student, a foundation program doctor, and then as a core/specialty trainee doctor.⁴ The literature suggests that there is a deficiency in the content, context, and variety of this teaching at all levels, as well as a clear disparity between how ENT is taught in different medical schools and in different areas of the country.⁹ Clamp et al¹⁰ carried out a survey of 357 GPs in southwest England, in which more than 75% felt that their ENT undergraduate teaching had not adequately prepared them for their daily practice. Khan and Saeed⁹ highlighted that in some medical schools students did not have an ENT rotation during their training, and in those that did, the average duration was only 8 days. Many of the student opinions raised in this study also showed that much of the ENT attachment time was usually spent in theaters and clinics, denying them the opportunity to gain more hands-on experience through taking histories and performing clinical examinations on patients with evident pathology. Due to this lack of formalized teaching, it is not difficult to see why many GP trainees do not feel comfortable in managing ENT pathologies and have to resort to “on-the-job” style learning, using methods and techniques, often suboptimal, passed on by their trainers. The disadvantage of this learning model is that if trainees have a poor technique or knowledge in ENT, it can be difficult to identify and correct these issues, as there are limited opportunities during which to do this. This is further compounded by inattention to specific ENT-related diseases during professional examinations, which tend to be fairly broad in scope and generic in content.¹⁰ A study by

Powell et al¹¹ showed that about 30% of trainees involved had not received any formal examination of knowledge and skills related to ENT. In a specialty where ENT problems are so common, it is clear that change is required in order to improve patient care and outcomes.

Studies conducted in countries other than the UK have found a similar paucity of ENT teaching during training, thus emphasizing the importance of this issue on a global scale.^{3,4} With an ever-increasing population size and an increased demand for GPs, coupled with outsourcing of hospital clinic workloads to primary care, there has never been a more pressing need to overhaul ENT-related teaching in order to improve the confidence of our GP workforce.¹

Preparedness for independent practice

As a doctor progresses through training, preparing for independent practice (and the accompanying responsibility for patients) becomes increasingly important in a stepwise fashion. The first such step is between medical student and foundation year one doctor. Illing et al¹² carried out a multi-modal cross-sectional study of newly qualified doctors from three medical schools in the United Kingdom, analyzing data from interviews, questionnaires, learning portfolio information, and prescribing assessments. They highlighted that many of the new medical graduates felt underprepared for clinical practice. This appeared to be mainly in areas where they had received less experience during undergraduate study, for example, managing acutely unwell patients and prescribing. In contrast, they were largely proficient in taking medical histories, a skill which had been developed extensively at the undergraduate level.¹¹

This feeling of being underprepared was also highlighted in similar studies assessing GP trainees. Griffin et al¹³ investigated the educational support available for newly qualified GPs and the impact it has on their transition to independent practice. In their paper, they discussed the increasing number of reports highlighting elements of poor performance among newly qualified GPs, citing a lack of preparedness as a possible cause. Many of the GPs that were interviewed for this study agreed that having a more formalized and structured support system from supervisors and senior colleagues may help to improve their confidence as they move toward being independent practitioners. At the time of the study, the amount of educational support available varied considerably between deaneries/regions across the country. Sabey and Hardy¹⁴ also examined the opinions of newly qualified GPs, with respect to their training and preparedness for practice, concluding that many did not feel comfortable to deal with

the whole scope of their expected specialty. It discussed the potential benefit of expanding the breadth and duration of training in order to better equip GPs to deal with an ever-increasing multi-comorbid and aging population.

Ensuring that doctors have had sufficient teaching and experience, in a broad range of specialties (including ENT), will have a positive effect on their preparedness for independent practice. Suggestions for achieving this aim include additional training years, structured support through clinical and educational supervisors, induction/shadowing programs, and simulation sessions. Dare et al¹⁵ assessed the impact of the internship year (ie, after the 5-year medical degree) on subjective confidence and preparedness for starting work as a doctor in a New Zealand cohort. The study found that after completion of the internship, 92% of students reported feeling prepared to be a junior doctor, compared to only 53% of students at the end of their 5th year. A different study by Berridge et al¹⁶ examined the effect of standardized induction programs on newly qualified doctors prior to commencing clinical practice. The study involved 53 doctors from 2 hospitals based in the UK. A structured 2-week induction program was delivered and included life support training in addition to shadowing of experienced Foundation Year one doctors. The participants' confidence was assessed through the use of questionnaire and focus groups at baseline, conclusion of the induction program, and 1 month post-program. The study highlighted that many of the initial anxieties were dissipated following induction, with particular value placed on the shadowing aspect of the program.

The GP tends to be the first port of call for many patients with acute ENT symptoms, and they expect their doctor to be confident in their assessment and know how best to manage them. By developing a teaching strategy which addresses the deficiencies in GP trainee confidence and preparedness for practice, we may begin to see a decrease in primary care referrals and hospital admissions.

Materials and methods

A learning needs assessment was sent out to trainees a few weeks prior to the anticipated teaching session to ascertain their baseline subjective confidence in assessing and managing common acute ENT pathologies, as well as performing basic ENT examinations. It was also used to see whether an ENT teaching session would be of interest and potential benefit to trainees, to which an overall positive response was received. Although no formal data was collected, a representative from the Watford GP training scheme was asked to assess the needs for the GP trainees and we were informed

that there was an overwhelming desire for a focused teaching session on ENT pathology. A single, whole, afternoon teaching slot at Watford General Hospital (UK) was then secured by the ENT team from the Luton and Dunstable University Hospital via the training program coordinators of the GP training scheme, and the session was advertised to the trainees to encourage attendance and participation.

A cross-sectional study was carried out during one of the weekly teaching sessions for Watford GP trainees at the Watford General Hospital, Hertfordshire, UK. The cohort consisted of 16 general practice vocational training scheme year one trainees. A formal presentation was created by one of the ENT registrar-grade doctors involved in the study and contained slides on diagnosing and managing common acute ENT pathologies such as otitis media and externa, epistaxis, tonsillitis, stridor, and other ENT pathology commonly seen in the primary care setting. There was also additional information in the slides relating to relevant basic sciences, ENT-specific terminology and classification systems and examination skills and techniques (Table 1). The presentation was delivered by two junior doctors (one foundation year two doctor and one core surgical trainee doctor) currently working within the ENT department at the neighboring Luton and Dunstable University Hospital. They also briefly focused

Table 1 Topics discussed in the ENT teaching session

Anatomy	Ear Blood supply to nose Sinuses Throat
Examination	Otосcopy
ENT acute presentations	Otitis externa Otitis media Acute mastoiditis Foreign body in ears Perichondritis Pinna hematoma Tympanic membrane perforation Epistaxis (including nasal cautery and packing) Foreign body in nose Fractured nose Septal hematoma Sinusitis Periorbital/orbital cellulitis Acute tonsillitis Glandular fever Peritonsillar abscess Stridor Supraglottitis/epiglottitis Post-tonsillectomy bleed

Abbreviation: ENT, ear, nose, and throat.

on demonstrating clinical examinations such as neck lump palpation and otoscopy.

A similar questionnaire was then distributed at the conclusion of the teaching session; however, it was modified to include items relating to usefulness, content, and interest in the presentation as a whole, as well as how the session helped to improve their confidence in daily practice.

The overall focus and aim of the questionnaires were to establish whether formalized ENT teaching within the GP training program improved the trainees' confidence in dealing with the plethora of ENT pathologies that regularly present to primary care.

Results

Overall, participant confidence scores improved across all subject areas as a result of the teaching intervention. The results from the learning needs assessment showed that at baseline, GP trainees were only confident in managing certain acute ENT presentations. Prior to the intervention, a mean of 73% of participants rated their confidence to recognize and manage perichondritis, otomyocosis, and mastoiditis as either "nonexistent" (1/5) or "minimal" (2/5). In contrast to this, the group's baseline confidence to recognize and manage otitis externa and media was at least "moderately confident" (3/5), except for one candidate who scored their confidence in recognizing and managing otitis media as nonexistent. Following the teaching session, a mean of 75% of participants rated their own confidence in dealing with perichondritis, otomyocosis, and mastoiditis as either "very confident" (4/5)

or "fully confident" (5/5). A confidence improvement was also seen with respect to the assessment and treatment of otitis externa and otitis media; however, this was of a lesser magnitude compared to the other common ear pathologies (Figure 1).

Similar trends in confidence scores from pre- to post-teaching intervention were demonstrated for common nasal and throat pathologies. Of note, among all preteaching confidence scores relating to the recognition and management of four common throat complaints (quinsy, stridor, epiglottitis/supraglottitis, and food bolus obstruction), 41% were categorized as "low" (2/5). In comparison, 87% of participants rated their preteaching confidence to assess and treat tonsillitis/glandular fever as "very confident" or "fully confident" (4/5 or 5/5, respectively) (Figures 2 and 3). Another prominent outcome from this study related to the management of epistaxis and airway emergencies, which demonstrated the highest proportion of nonexistent confidence responses (1/5) in the preteaching questionnaire of any domain. Almost a third of GP trainees (31%) had no confidence in managing epistaxis and 42% had no confidence in managing threatened airways.

It was not just confidence in diagnosing and managing acute ENT pathologies that was addressed by the teaching session. A dramatic improvement in confidence to perform basic ENT examinations (otoscopy, neck lump assessment, throat and nose examination) was observed from baseline to postintervention. Seventy percent of collated initial responses fell into the categories of "not confident",

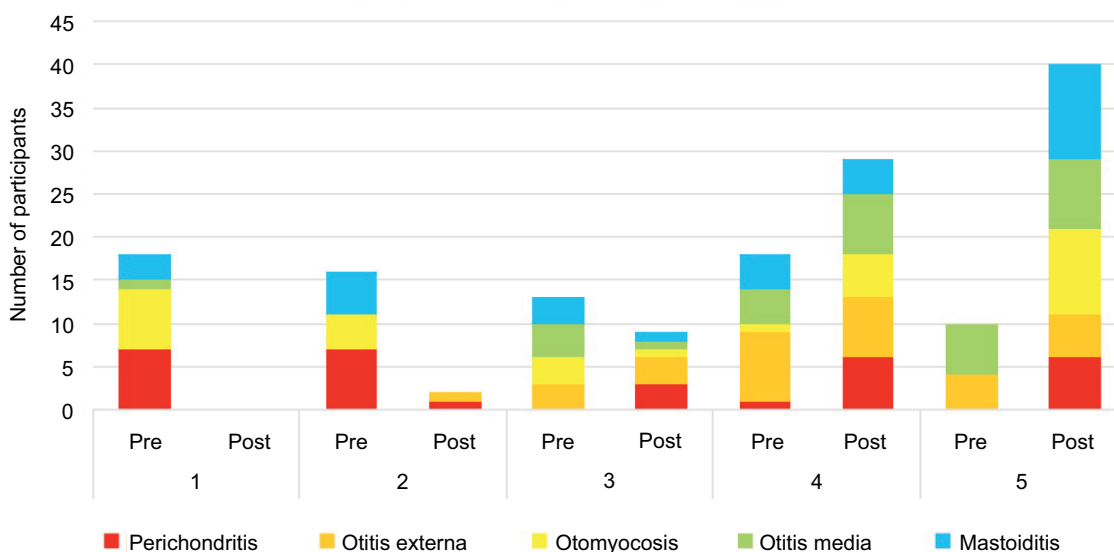


Figure 1 Pre- and postteaching confidence scores in recognizing and managing common ear pathologies. **Notes:** 1 = Not confident; 5 = fully confident.

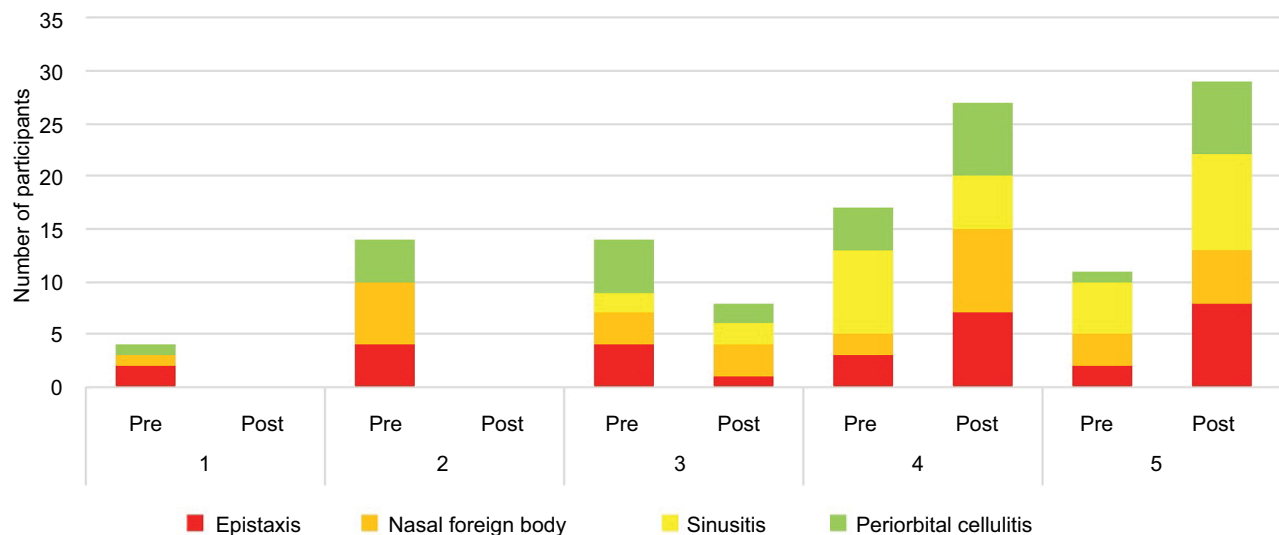


Figure 2 Pre- and postteaching confidence scores in recognizing and managing common nasal pathologies.
Notes: 1 = Not confident; 5 = fully confident.

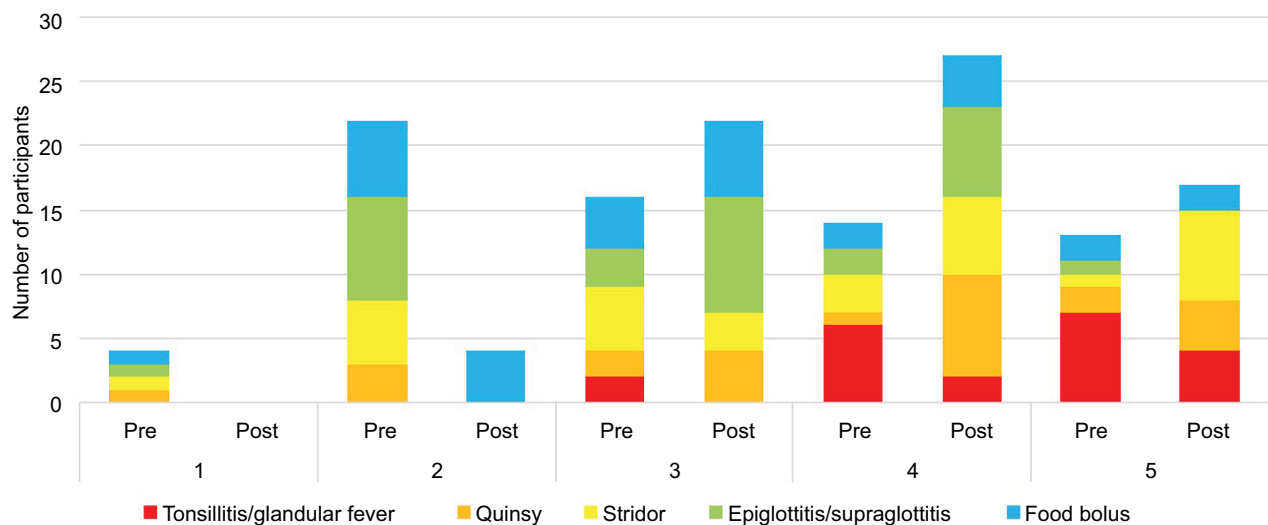


Figure 3 Pre- and postteaching confidence scores in recognizing and managing common laryngopharyngeal pathologies.
Notes: 1 = Not confident; 5 = fully confident.

“minimally confident,” or “moderately confident” (1/5, 2/5, and 3/5, respectively), whereas following teaching only 5% of collated response fell into these categories (Figure 4). A similar phenomenon can be seen when looking at the graph for confidence related to managing post-tonsillectomy complications such as infection and bleeding as a GP. The overall confidence in managing postoperative infections initially was mainly on a scale of 1–3 out of five (62.5%), few had a confidence of 4 or 5 out of five (31.2%), of which only one person was 5/5 confident (6.25%). Following our teaching session, there was a gross improvement in confidence, 14 of the 16 trainees (87.5%) now felt 4 or 5 out of five confident

and 0 felt grade 1 or 2 confident out of five to manage this known and common complication. A similar pattern was seen in the post-tonsillectomy bleeding data results; prior to our teaching session, the majority of trainees felt only grade 1–3 confident in managing this complication (81.3%), again only one trainee felt 5/5 confident prior to our session. The postintervention or -teaching session confidence again enhanced for the trainees, as such that now 93.6% of trainees felt level 3–5 confident (75% were 4/5 or 5/5 confident) and zero trainees were now 1/5 confident (Figure 5).

The final item on the postsession questionnaire asked the trainees about their impression of the teaching session as a

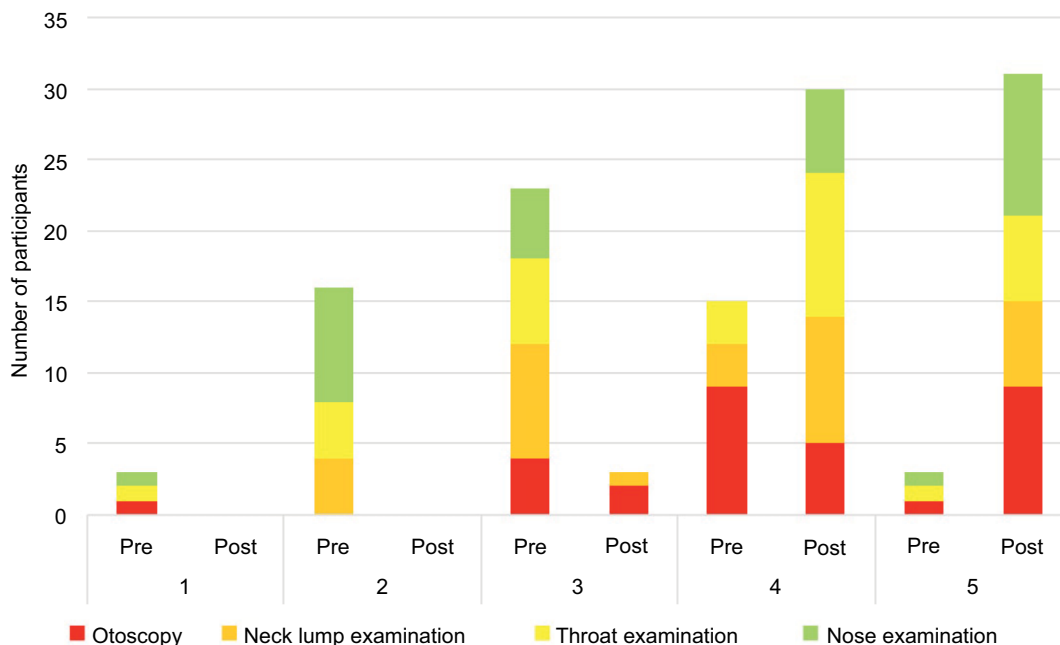


Figure 4 Pre- and postteaching confidence scores in ENT examination.

Notes: 1 = Not confident; 5 = fully confident.

Abbreviation: ENT, ear, nose, and throat.

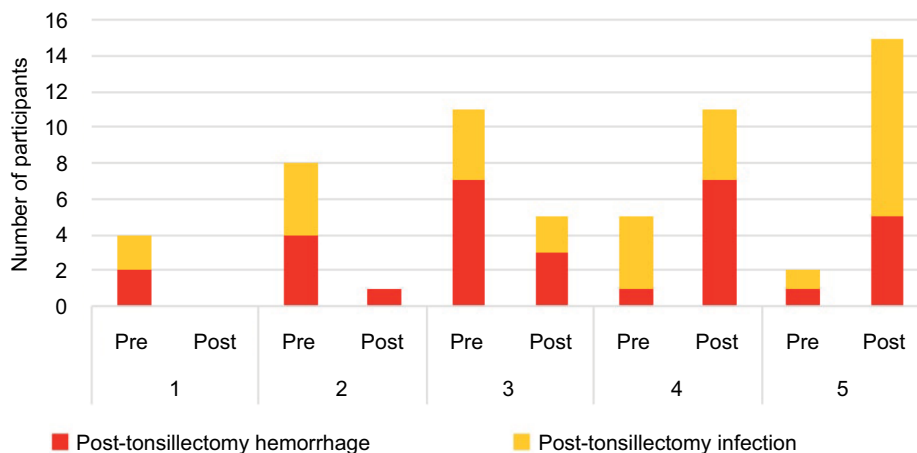


Figure 5 Pre- and postteaching confidence scores in management of post-tonsillectomy complications.

Notes: 1 = Not confident; 5 = fully confident.

whole. Aspects of usefulness, level of course interest, and quality of both presenter and content were regarded highly, with 69%, 81%, 94%, and 88% of participants, respectively, selecting a rating of “very good” (4/5) or “excellent” (5/5) for these domains.

Discussion

The literature has repeatedly shown us that increasing experience and amount of delivered teaching improves the confidence and competence of students or doctors in that

respective domain. For example, Dare et al¹⁵ demonstrated an improvement in medical students’ confidence following a year of internship training prior to commencing professional practice. This was seconded by Sabey and Hardy,¹⁴ who found that among GPs, a high number thought that adding an additional year to the GP training program would increase their preparedness for independent practice. With respect to our learning needs assessment, baseline confidence appeared to be much higher in presentations such as otitis media and externa than epistaxis or stridor. It is not difficult

to conclude that the increased confidence in managing these pathologies comes from the fact that they present much more commonly in primary care and therefore trainees will have had much more experience in dealing with them. Studies have shown otitis media to be one of the most common reasons for children to be prescribed antibiotics in the primary care setting.¹⁷ Stridor and epistaxis can be very acute and more imminently life-threatening and patients would therefore be more likely to attend the emergency department directly, thus bypassing their GP.

Compared to baseline data, the postsession evaluation questionnaire revealed an increase in trainee confidence to recognize and manage most of the common acute ENT pathologies. Results also showed that the trainees who attended the session found it useful and interesting. This highlights two important points: formalized and dedicated specialist teaching in ENT improves the confidence and perceived competence of the trainee GP and, the teaching can be done in such a way that the trainees feel like they have learned something useful and would attend a similar session again. Hutchinson identified ways in which to ensure a good learning session takes place – some of which can be identified in this study. First, it is important to create a positive learning environment. The teacher must be familiar with his or her pupils' skill level and previous experience in addition to the session objectives. This was addressed in our study by the baseline learning needs assessment undertaken by their own peer/colleague, a few weeks prior to the allocated teaching session. Second, the teacher must be fully prepared to deliver the session. By following these points, pupils and teachers are enabled to make the most out of the allocated time available for teaching.¹⁸ Our session was delivered by doctors with similar seniority to that of the GP trainees but who possessed up-to-date ENT knowledge and skills on account of working in otolaryngology departments at the time of the study.

The teaching content was delivered in a predominantly didactic manner; however, there are various other ways in which to provide a formal and focused ENT session for GP trainees. Okuda et al¹⁹ carried out a literature review to assess the benefit of simulation training as part of medical education. The review found that in many of the relevant studies, simulation developed and improved the participants' procedural performance, medical knowledge, team work, communication, and confidence.¹⁹ This type of teaching may be useful for acute scenarios which are unfamiliar to the GP trainee, such as stridor, epistaxis, or post-tonsillectomy bleeding. Nathavitharana²⁰ looked at the benefit of having

an online generic training for doctors in training to try and enhance patient safety, improve efficiency, and minimize repetition of teaching content. Though this study did not directly link to ENT, its findings could be used to inform improvements in the ENT curriculum, such as supplementary online modules or mobile applications which can reach a wide target audience.

Finally, it is worth highlighting from our results, the outlier trainee who reported much lower baseline confidence in managing otitis media and externa (ie, as “nonexistent”), compared to his peers. Within a cohort of doctors (in this case GP trainees) in the same hospital, many of them will have trained at different medical schools and will have had different rotations during foundation training. We have already seen in the study by Khan and Saeed⁹ that medical schools across the country differ in the ENT curriculum and teaching program they provide, and ultimately this will produce doctors with varying capabilities and confidence in managing ENT scenarios. Many medical schools also do not have a formal examination to test ENT knowledge.¹¹ It is therefore important that a structured, facilitated, and standardized ENT training and examination process is implemented throughout all medical schools in the UK, to ensure that medical graduates start off their professional career as a doctor with the same baseline knowledge in ENT conditions. This will not only ensure that trainees' confidence is increased in assessing and managing acute ENT pathology but will also mean that graduates are more satisfied with the training that they have received. In the study by Clamp et al,¹⁰ a proportion of the participants were satisfied with the undergraduate ENT training they had received; however, satisfaction increased further from 24% to 33% when a formal ENT examination was incorporated. The Department of Health relies on 50% of all medical school graduates entering primary care in order to meet service demands, thus emphasizing the importance of ensuring that GPs are trained adequately in common ENT scenarios and presentations.²¹

Limitations and further work

Our study was conducted in one hospital with a small cohort of participants due to resource and logistical restraints. It did not take into consideration the baseline experience of trainees, many of whom may have undertaken a rotation in ENT surgery previously or had significant exposure to ENT during their postgraduate practice, such as in Accident and Emergency, or undergraduate training. Furthermore, we have also touched upon the variance in educational support offered by different deaneries for GP training.¹³ A more

rigorous study would therefore involve a much larger number of participants, and attempt to adjust for differences in baseline ENT knowledge.

Although this study did show increased confidence in many elements of the assessment and management of ENT pathology following a small group lecture-based style of delivery, people do differ in their learning preferences and may derive greater benefit from other approaches to teaching, eg, a high degree of interactivity. Future sessions could adopt a mix of lectures and practical sessions (such as bedside teaching and peer examination) in order to appeal to a wider variety of learners, although we acknowledge that this would require a great deal more in terms of planning, execution, and overall logistics and resources.

Likert-scale responses are limited in their ability to capture the nuances of clinical confidence, and thus a focus group discussion may have provided additional data for corroboration of questionnaire findings as well as enabling a thematic analysis. Our investigative model could also be applied to other health care professionals who regularly encounter ENT pathology, including nurse practitioners and, in the future, physician's associates. These groups play a significant role in the primary care setting in managing minor ENT-related ailments, and it would be beneficial to identify learning needs in these cohorts as part of intelligent and inclusive teaching design.

Conclusion

Acute ENT pathology commonly presents to primary care, especially to the GP. It is crucial for their basic teaching, knowledge, and confidence in managing common acute ENT presentations to be of an adequate and safe standard so that they may competently discharge their daily responsibilities. An effective GP must possess a vast breadth of knowledge as well as an ability to recognize the acutely unwell patient; however, the skill of maintaining knowledge and skills as part of continuing professional development is of equal importance to the independent practitioner.

Dedicated, focused, and relevant teaching/training sessions enable GP trainees to have the opportunity to learn, consolidate knowledge, and put theory into clinical practice by having the opportunity to ask questions and practice. Regular sessions on various ENT pathology, clinical examination, and related topics may help to further improve GP confidence and perceived competence and enhance their daily practice as independent practitioners. Ultimately, this may improve the quality of care and the patient experience while reducing inappropriate referrals to specialists in secondary

and tertiary units. It is also prudent to note that this may contribute to improving the efficiency and efficacy of primary care for patients.

Acknowledgment

The authors thank the staff, faculty, and trainees of the Watford general practice vocational training scheme who made this project possible through their invaluable assistance and participation. We also like to thank the clinicians and staff within the ENT Department at the Luton and Dunstable University Hospital for supporting and encouraging the authors.

Disclosure

The authors report no conflicts of interest in this work.

References

1. GP Taskforce Final Report. Securing the Future GP Workforce Delivering the Mandate on GP Expansion; 2014:63.
2. Griffiths E. Incidence of ENT problems in general practice. *J R Soc Med.* 1979;72(10):740–742.
3. Donnelly MJ, Quraishi MS, McShane DP. ENT and general practice: a study of paediatric ENT problems seen in general practice and recommendations for general practitioner training in ENT in Ireland. *Ir J Med Sci.* 1995;164(3):209–211.
4. Farooq M, Ghani S, Hussain S. Prevalence of ear, nose and throat diseases and adequacy of ENT training among general physicians. *Int J Pathol.* 2016;14(3):113–115.
5. Sandhu DPS, Waddell A. Teaching ENT in primary care. *Otolaryngol Open Access.* 2016;6(2):228.
6. Sandhu DPS. How can we create a curriculum fit for tomorrow's doctors and patients? [webpage on the Internet]. *Br Med J Careers*; 2015. Available from: http://careers.bmj.com/careers/advice/How_can_we_create_a_curriculum_fit_for_tomorrow's_doctors_and_patients%3F. Accessed October 15, 2017.
7. Royal College of General Practitioners. Guidance for deaneries/LETBs on the standards for GP specialty training [webpage on the Internet]; 2014. Available from: <http://www.rcgp.org.uk/-/media/Files/GP-training-and-exams/Information-for-deaneries-trainers-supervisors/Guidance-for-deaneries-on-standards-for-GP-training-Jan-2014.ashx?la=en>. Accessed October 15, 2017.
8. Royal College of General Practitioners. The RCGP Curriculum: Clinical Modules [webpage on the Internet]; 2015. Available from: <http://www.rcgp.org.uk/GP-training-and-exams/-/media/Files/GP-training-and-exams/Curriculum-2012/RCGP-Curriculum-3-15-ENT-Oral-and-Facial-Problems.ashx>. Accessed October 15, 2017.
9. Khan M, Saeed SR. Provision of undergraduate otorhinolaryngology teaching within general medical council approved UK medical schools. *J Laryngol Otol.* 2012;126(4):340–344.
10. Clamp P, Gunasekaran S, Pothier DD, Saunders MW. ENT in general practice: training, experience and referral rates. *J Laryngol Otol.* 2007;121(6):580–583.
11. Powell J, Cooles FA, Carrie S, Paleri V. Is undergraduate medical education working for ENT surgery? A survey of UK medical school graduates. *J Laryngol Otol.* 2011;125(9):896–905.
12. Illing J, Peile E, Morrison J. How prepared are medical graduates to begin practice? A comparison of three diverse UK medical schools. Final Report for the GMC Education Committee. General Medical Council/Northern Deanery; 2008:30.
13. Griffin A, Abouharb T, Etherington C, Bandura I. Transition to independent practice: a national enquiry into the educational support for newly qualified GPs. *Educ Prim Care.* 2010;21(5):299–307.

14. Sabey A, Hardy H. Views of newly qualified GPs about their training and preparedness: lessons for extended generalist training. *Br J Gen Pract.* 2015;65(633):e270–e277.
15. Dare A, Fancourt N, Robinson E, Wilkinson T, Bagg W. Training the intern: the value of a pre-intern year in preparing students for practice. *Med Teach.* 2009;31(8):e345–e350.
16. Berridge EJ, Freeth D, Sharpe J, Roberts CM. Bridging the gap: supporting the transition from medical student to practising doctor – a two-week preparation programme after graduation. *Med Teach.* 2007;29(2–3):119–127.
17. Henderson J, Valenti L, Miller GC. General practice antibiotic prescribing for management of otitis media in children. *Aust Fam Physician.* 2016;45(6):363–365.
18. Hutchinson L. Teaching and learning in the clinical context [webpage on the Internet]. London Deanery; 2003. Available from: http://www.faculty.londondeanery.ac.uk/e-learning/assessing-educational-needs/Teaching_learning_in_clinical_context.pdf. Accessed October 15, 2017.
19. Okuda Y, Bryson EO, DeMaria S Jr, et al. The utility of simulation in medical education: what is the evidence? *Mt Sinai J Med.* 2009;76(4):330–343.
20. Nathavitharana K. Online generic induction for doctors in training: an end to repetition? *Br J Hosp Med (Lond).* 2011;72(10):586–589.
21. Department of Health. Delivering high quality, effective, compassionate care: Developing the right people with the right skills and the right values. A mandate from the Government to Health Education April 2014 to March 2015. England: Williams Lea; 2014:52.

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