

Main Article

Mr B Patel takes responsibility for the integrity of the content of the paper

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Abstract

Objective. This study aimed to report the changes made to ENT placements across the UK in response to the pandemic and their impact on student experience.

Methods. A questionnaire eliciting how ENT placements were provided before and after coronavirus disease 2019 was disseminated amongst Student and Foundation Doctors in Otolaryngology representatives.

Results. Thirty-eight respondents from 27 medical schools across the UK completed the survey (response rate of 90 per cent). Twenty-nine of the 38 respondents (76 per cent) reported a change in ENT placements in response to the pandemic. Six of the 38 students (16 per cent) remained satisfied with their ENT placements, as compared to 12 students prior to the pandemic (32 per cent).

Conclusion. There is considerable variability in how medical schools responded to the pandemic. Most medical schools placed students into smaller groups, with less direct contact in the hospital. These changes resulted in lower student satisfaction. The increased emphasis on e-learning underscores the need for high quality e-learning materials to promote learning throughout the pandemic and in the future.

Introduction

Clinical placements are a keystone of undergraduate medical education. Placements allow students to develop their knowledge of pathologies and their management through clinical encounters. Placements also provide opportunities to develop clinical skills and, through socialising with clinicians, a means of developing essential professional attitudes. The value of clinical placements is particularly important in ENT, which occupies little space elsewhere in the undergraduate curriculum.^{1–3} As a consequence of short clinical rotations with limited hands-on learning opportunities, most final year medical students and junior doctors in the UK do not feel confident in managing patients with common ENT pathologies.⁴

The coronavirus disease 2019 (Covid-19) pandemic and resulting disruption to routine services further challenged the delivery of clinical placements in ENT. The necessary measures instituted to limit Covid-19 transmission within hospitals (including the suspension of elective services, and the conversion of face-to-face appointments to remote consultations) reduced opportunities for students to learn during placements.⁵ As a result, clinical placements in ENT were either augmented or suspended, further exacerbating the existing shortcomings of undergraduate ENT education. A nationwide survey of UK final year medical students showed that disruptions to student placements had the greatest negative impact on their confidence and preparedness.⁶

A recent survey suggested that the majority of patients are comfortable with having medical students attend clinical placements, despite the pandemic.⁷ As departments across the country begin to emerge from the pandemic and reinstate clinical placements, it remains important to reflect upon the impacts of the recent disruption on students. These reflections can be used to guide strategies to manage the educational impact of future surges of Covid-19 cases.

This study therefore aimed to: (1) describe the changes in undergraduate clinical placements in ENT made by medical schools across the UK in response to the Covid-19 pandemic; (2) ascertain how these changes have affected students' satisfaction with the provision of undergraduate ENT teaching; and (3) identify how to support medical schools in optimising the provision of undergraduate ENT during further surges of Covid-19.

Materials and methods

This study comprised a cross-sectional questionnaire of medical students attending medical schools across the UK. Participants were invited to participate through their capacity as ENT-UK Student and Foundation Doctors in Otolaryngology representatives.

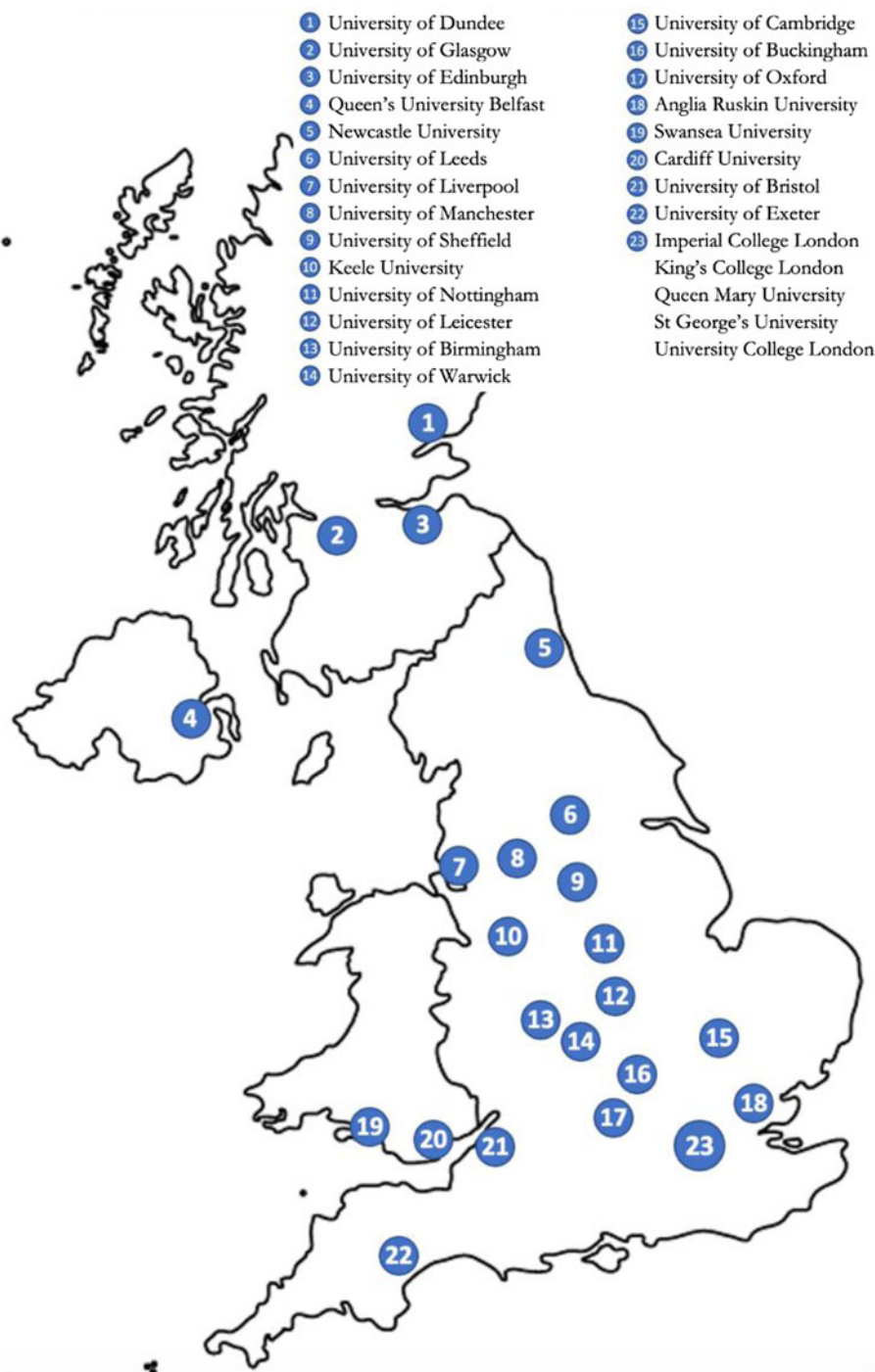


Fig. 1. Medical schools represented by survey respondents.

The questionnaire was divided into three sections: the first section elicited how clinical placements were delivered prior to the Covid-19 pandemic; the second section elicited how placements have changed in response to the pandemic; the final section elicited the participants' comfort in attending clinical placements during the pandemic. Comfort and satisfaction were assessed using a 5-point Likert scale, with ratings interpreted as follows: 2 or lower = negative response (uncomfortable or dissatisfied), 3 = neutral response and 4 or higher = positive response (comfortable or satisfied).

Results

A total of 38 participants completed the survey, representing 27 out of 30 medical schools with a Student and Foundation Doctors in Otolaryngology representative (90 per cent)

(Figure 1). A further five medical schools were recognised by Student and Foundation Doctors in Otolaryngology, but had no representative at the time of our survey distribution. We received multiple responses from six medical schools that had more than one representative. We analysed the data with each medical school receiving a weightage of $n = 1$, so as not to bias our results in favour of medical schools that had more students respond to our survey.

Provision of ENT placements prior to coronavirus

Undergraduate ENT education was provided as follows: through dedicated ENT placements (12 out of 27; 44 per cent); as part of placements that included other specialties (14 out of 27; 52 per cent); or incorporated within a 'general practice' placement (8 out of 27; 30 per cent). Six out of

27 medical schools (22 per cent) delivered ENT education by combining two or more approaches in their curriculum.

The majority of medical schools (20 out of 27; 74 per cent) provided information on the length of ENT placements. Placements of one week or less were most common (15 out of 20; 75 per cent), while 5 out of 20 medical schools (25 per cent) provided placements lasting two weeks or longer. Furthermore, 17 out of 27 medical schools (63 per cent) offered the opportunity to undertake an additional optional placement in ENT.

For medical schools providing in-hospital ENT placements, these included a combination of formal teaching sessions, and access to out-patient clinics and operating theatres. Encouragingly, placements at 19 out of 27 medical schools (70 per cent) included formal teaching sessions. Almost half of medical schools (13 out of 27; 48 per cent) also timetabled out-patient clinics and operating theatres along with formal teaching sessions.

Respondents indicated their level of satisfaction with ENT provision in meeting their educational objectives prior to Covid-19. We chose to report these results per participant as opposed to per medical school to reflect how different programmes are received by a wide variety of students. Only one-third of respondents (12 out of 38) stated that they felt satisfied with ENT provision in meeting their learning requirements, while half (19 out of 38) felt neutral. The remaining 18 per cent conveyed that they had been dissatisfied with ENT provision in meeting their objectives.

ENT placements following coronavirus

Participants were asked to select the maximum tier of restrictions that their region, and by extension their medical school, had been under during the peak of the Covid-19 pandemic. The majority of medical schools (22 out of 27; 81 per cent) had been under tier 3 restrictions (very high alert) and five medical schools (19 per cent) had been under tier 2 restrictions (high alert).

Most participants (29 out of 38; 76 per cent) reported that their medical schools had changed the provision of ENT placements in response to the Covid-19 pandemic. These changes are summarised in Table 1.

Most students (30 out of 38; 79 per cent) stated that they were comfortable in attending placements during Covid-19, while six students (16 per cent) felt neutral. The remaining two students (5 per cent) felt uncomfortable in attending face-to-face activities.

Following changes made to placements in response to the Covid-19 pandemic, only 6 students felt satisfied with placements in meeting their learning objectives (16 per cent), while 13 students (34 per cent) felt dissatisfied with the provision of ENT clinical placements since the pandemic began.

Discussion

This study found variable provision of undergraduate ENT education between medical schools across the UK in response to the Covid-19 pandemic. Despite notable adjustments by universities to provide adequate ENT education in response to Covid-19, most respondents reported lower satisfaction scores. It is also interesting to note that prior to Covid-19, only 32 per cent of respondents felt satisfied with ENT provision in meeting their educational objectives. This is reflective of long-standing and existing shortcomings in ENT education provision in undergraduate curricula, and suggests the

Table 1. Changes in delivery of ENT placements in response to Covid-19 pandemic

Change in ENT placement delivery	Percentage of medical schools implementing change
Increased virtual or online component	61
Smaller groups of students on a placement	32
Shorter duration of placement	29
No change to placement	16
No face-to-face component	13
ENT placement merged with other specialties	11
Students self-isolating and forming 'bubbles' for purposes of placements	5
No operating theatre sessions	5
ENT placement not provided for all students	5
Reduced clinics	3

Covid-19 = coronavirus disease 2019

Covid-19 pandemic has further exacerbated these shortcomings. Below, we outline key findings from our survey, and present potential solutions to the challenges raised by students.

Prior to Covid-19, most medical schools offered a compulsory ENT placement, and most provided formal teaching sessions and access to out-patient clinics and operating theatres. Following the onset of the Covid-19 pandemic, medical schools opted to: suspend face-to-face clinical activities, reduce the duration of placements, minimise group sizes and remove dedicated ENT placements. Subsequently, medical schools have chosen to augment placements by increasing virtual components, and introducing e-learning activities, clinical skills workshops and 'general practice' placements that focus on ENT, as substitutes for, or in parallel with, conventional clinical activities.

The shift towards online learning in response to the Covid-19 pandemic is controversial amongst students and educators. A recent systematic review examining changes to undergraduate medical education stemming from the Covid-19 pandemic concluded that virtual clerkships could not replace the educational value attained from physically interacting with patients.⁸ However, the authors found that an important component of effective online education was to provide pre-placement learning materials, such as recorded lecture videos or recommended reading texts, because this enabled students to maximise their in-person learning opportunities.

High quality e-learning resources are known to be effective for developing basic clinical knowledge and selected skills.^{9,10} E-learning resources can thus be utilised to support and scaffold learning during clinical placements as part of a blended learning approach. Through such an approach, core knowledge can be developed through e-learning resources provided prior to a placement, while more advanced levels of understanding can be developed through clinical skills workshops and experience in clinical placements.¹¹ Examples of readily available educational resources include the Student and Foundation Doctors in Otolaryngology UK handbook, along with videos of clinical examinations hosted on the Student and Foundation Doctors in Otolaryngology UK website.¹² Disseminating such resources across medical schools can

also be helpful to standardise and improve the level of ENT education nationally.

There is strong evidence in the literature that shows the efficacy of peer-to-peer teaching in improving in-person and online medical education, especially during the Covid-19 pandemic.^{13–15} An example of a successful peer-to-peer initiative within ENT is an annual student-led ENT Objective Structured Clinical Examination ('OSCE') course, provided for 159 medical students over three years, which has received overwhelmingly positive feedback.¹⁶ Engaging senior medical students with an interest in ENT, such as Student and Foundation Doctors in Otolaryngology members, to develop peer-assisted learning resources could therefore help address the reduced learning opportunities in clinical placements in response to the Covid-19 pandemic.

Although the use of ENT clinical skills workshops aimed at medical students has increased since the pandemic began, we would posit that their development is still in its infancy and requires further work. When assessing the extent to which UK medical school learning outcomes currently correlate with a suggested undergraduate curriculum provided by Student and Foundation Doctors in Otolaryngology, a survey of two medical schools found that approximately 50 per cent of suggested outcomes were met and the majority did not deliver teaching on common ENT clinical skills.¹⁷ Examples of successful clinical skills teaching include flexible nasolaryngoscopy training with a mannequin¹⁸ and ENT boot camps.¹⁹

A three-armed, single-blinded, randomised, controlled trial was used to evaluate whether flexible nasolaryngoscopy training using a realistic human mannequin would impact on the performance of junior doctors and final year medical students.¹⁸ The authors found that simulation-based teaching with an anatomically correct model was a simple and effective method of improving skills.

Similarly, an ENT boot camp was developed to train junior doctors, with a focus on simulation-based skills education for the initial management of patients with ENT emergencies.¹⁹ The format consisted of focused lectures on basic otolaryngology and emergencies, simulation training on common emergency scenarios, and practical skills training. Following the boot camp, the authors received overwhelmingly positive feedback, and all participants felt more confident dealing with ENT examinations and emergencies.

These examples illustrate how incorporating specific, goal-oriented clinical skills training into undergraduate ENT education can significantly improve students' experience, and thus should be strongly considered. Such workshops could also help to address some criticisms we noted in our survey pertaining to reduced clinic or operating theatre time, and restricted hands-on experiences with patients. It is, however, important to note that a limitation of simulation training in the manner above would be the increased financial burden to medical schools.

For medical students interested in pursuing ENT as a career, mentorship programmes are a valuable way to augment their experiences and nurture their interests during medical school. A study at Ohio State University matched 35 students with 17 faculty members to learn about the specialty and offer mentorship.²⁰ The authors found that participants scored significantly higher in terms of confidence for clinical performance and familiarity with ENT. Furthermore, all students felt the programme was useful in preparing them for clinical rotations, and some were matched into competitive otolaryngology residencies. Mentorship programmes specifically aimed at

interested medical students would greatly enhance their perspective of the profession. These programmes are necessary given that students are experiencing reduced face-to-face contact with ENT specialists because of the Covid-19 pandemic, which may reduce their interest in a career within this specialty.²¹

- The provision of undergraduate clinical placements in ENT has been identified as an area requiring improvement
- Disruptions in ENT placements following the coronavirus disease 2019 pandemic have resulted in poorer student satisfaction
- The pandemic has highlighted the need for high quality e-learning materials to promote learning throughout placements
- Dedicated peer-to-peer teaching and near-peer mentoring programmes can help address shortcomings associated with reduced face-to-face placements

Our work is restricted by limited student participation; as the ENT curricula of most universities is being represented by one student per institute, our results may not reflect the beliefs held by the wider cohort. Furthermore, the sample surveyed were members and representatives of the Student and Foundation Doctors in Otolaryngology groups. Participants were therefore likelier to have a vested interest in ENT, which may have impacted their satisfaction scores, and increased their likelihood of undertaking optional placements and activities. It is probable that this increased the impact of selection bias on our results. However, our findings are meaningful as a snapshot of ENT education for undergraduate medical students, and they provide insight into key areas for improvement.

Competing interests. None declared

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