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Learning new ways of teaching and assessment: the impact of COVID-19 on undergraduate dermatology education

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COVID-19 has resulted in unprecedented global disruption. As this global pandemic persists with no end in sight, its impact on undergraduate medical education must not be ignored.

Dermatology undergraduate exposure is variable, limited and often suboptimal. It has been shown that medical students and qualified doctors are not adequately confident in their ability to assess and manage skin conditions, and many feel that their undergraduate dermatology teaching was not satisfactory.^{1,2} In addition to curriculum requirements, it is important to introduce medical students to the field of dermatology, in an effort to promote career interest in our specialty.

In March 2020, Irish universities were closed and clinical rotations suspended. This presented educators with an immediate need to adapt our teaching methods to limit the negative impact on undergraduate dermatology

exposure. We report our experience of undergraduate dermatology teaching during this extraordinary time.

We adopted the platform Microsoft Teams to deliver online teaching to medical students. This collaboration tool facilitated video lectures with active student participation, real-time discussion and document sharing. Teaching sessions included didactic lectures, interactive tutorials, and student-led case and topic presentations.

Remote assessment is challenging, as all online assessments from home are essentially open-book. We sought to devise a rigorous tool to assess students' dermatology knowledge. We designed an online 30-question multiple-choice examination using the online learning management platform Canvas, with each question based on a clinical image. We felt that the use of clinical images would offset any potential benefit of additional information resources available to students in the home environment, and a maximum time of 30 min was allocated to complete the examination. Students were allowed to take the examination in any 30-min period during a 24-h window, in order to accommodate time differences for overseas students, who had returned home upon closure of the universities.

Studies have demonstrated that university students have experienced increased symptoms of anxiety and depression due to the COVID-19 pandemic, which may in part be attributable to the effect on their studies.^{3,4} In an effort to alleviate anxiety related to their dermatology rotation, we allocated a specialist registrar in dermatology as a point of contact, and encouraged students to reach out with any concerns related to their rotation.

On reflection, we successfully substituted scheduled in-person teaching and assessments with online alternatives, but did not implement a suitable alternative to clinical patient interaction. As we slowly return to a 'new normal' with video consultations, virtual clinics and a gradual increase in in-person consultations, we must consider how best to incorporate our dermatology students into this new clinical setting. Social distancing is likely to dictate our practice, with a significant impact and reduction in clinical rotations likely for the months and potentially years ahead.

In addition to our current teaching methods as outlined above, we will invite medical students to participate in our virtual weekly journal club, and departmental clinical and multidisciplinary meetings, which are now established online. We plan to upload short videos on Canvas demonstrating surgical techniques and procedures. We also plan to develop dermatology podcasts for medical students. In order to protect the invaluable experience of patient encounters while facilitating the requisite social distancing, participation of medical students in video consultations and virtual patient visits via online applications will also be explored.

While virtual learning cannot replace hands-on clinical experience and patient exposure, the unique circumstances of COVID-19 have promoted innovation in medical education. We must continue to develop alternative

learning streams to the best of our ability to ensure adequate preparation of the next generation of doctors in an era where clinical rotations are likely to be limited for the foreseeable future.

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COVID-19: challenges and solutions for the future of UK dermatology undergraduate curriculum delivery

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The COVID-19 pandemic has left dermatology practice in disarray globally. Patient-facing services have been compromised for patients and clinicians alike. The implications of such disruption for dermatology undergraduate education are unknown. Numerous undergraduate programmes have faced disruption, with teaching postponed or featuring reformatted, *ad hoc* delivery. Following the pandemic, it is anticipated that UK medical education will face a 'new normal', with a much greater emphasis on technology-enhanced learning.¹ This presents a challenge to dermatology educators as we reflect upon our undergraduate curriculum delivery in an uncertain climate.

The most recent curriculum review occurred in 2015,² and reported that, pre-pandemic, most dermatology education was delivered via a secondary care rotation in the fourth year of study, with a strong predilection for clinic-based observation and teaching. The report also called for greater use of online resources and collaboration between medical schools (Table 1).

Table 1 Methods of undergraduate dermatology education delivery, from 2015 BAD curriculum review.²

Learning and teaching method	Medical schools	
	<i>n</i>	%
Outpatient clinics	30	100
Tutorials	28	93
Observation of surgery	28	93
Observation of specialist nurses	26	87
Problem-based learning	25	83
Lectures	25	83
Log book	24	80
Electronic learning	20	67
Clinical slides/images	20	67
Clinical skills laboratory	18	60
Ward based	16	53
Teaching clinic	16	53
BAD expert lectures	14	47
Other e-lectures	14	47
Histology demonstrations	7	23
Critical appraisal	7	23
Expert patient workshops	5	17

BAD, British Association of Dermatologists.

To continue to provide patient care during the pandemic and beyond, outpatient clinics have been augmented by teledermatology, with dermatologists offering telephone or video consultations. However, this clearly presents challenges for student clinics. In such a scenario, observing clinics immediately becomes more complex, presenting practical issues that range from technical threats to patient consent and time pressures. Access to cohort-wide lectures may be restricted, further

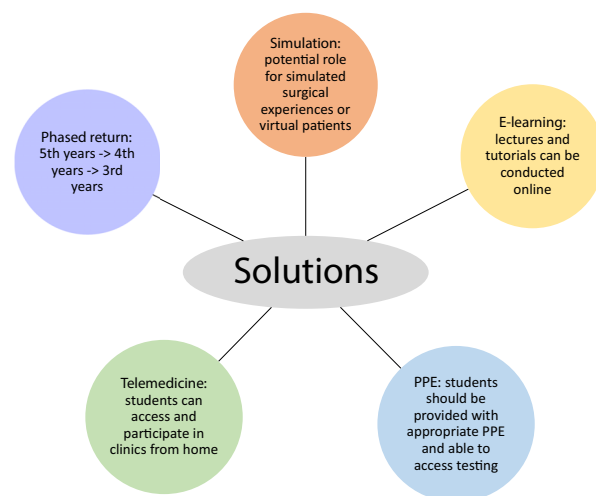


Figure 1 Potential solutions for delivery of undergraduate education in the upcoming academic year, from Medical Schools Council.⁴