

is uncertain as a second peak is currently developing in some parts of the world. For the processes that were instigated above, we are better prepared in the event of one. ■

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## Supplementary material

Additional supplementary material may be found in the online version of this article at [www.rcpjournals.org/fhj](http://www.rcpjournals.org/fhj):

S1 – Summary of patients with malignant effusions and their outcomes.

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## Who should develop massive open online courses (MOOCs) for undergraduate medical education?

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Editor – The future of medical education is online and as the world restructures in the midst of this pandemic there is opportunity for this future to be expedited. As a group of medical students from the UK, we have seen great variation in the content of online education provided by medical schools, in lieu of normal teaching, to cater for

students currently isolating at home. With the likelihood that online courses will become increasingly integrated into undergraduate medical education we believe there is a need for centralised development of high-quality learning resources.

Online education is not novel, with many medical schools already successfully incorporating methods of online teaching, such as the ‘flipped classroom’ model into their curricula.<sup>1</sup> Massive open online courses (MOOCs) have the potential to become the ‘gold standard’ for delivering learning objectives through interactive online teaching and videos, recommended reading, discussion forums and automated assessments. Successful MOOCs already exist, as demonstrated by a joint project by the University of Dundee and British Society for Antimicrobial Chemotherapy (BSAC), who developed a MOOC to compensate for the lack of standardisation of undergraduate antimicrobial resistance and stewardship teaching.<sup>2</sup>

Medical school curricula are developed locally around core competencies set by the General Medical Council (GMC), leading to inevitable variation.<sup>3</sup> We propose that MOOCs should be designed by professional bodies, such as the royal colleges and national societies (eg BSAC), which are actively involved in creating guidelines, setting assessments and developing training pathways for specialty trainees. Developing an effective MOOC requires establishing a central curriculum, identifying a target audience and creating relevant content.<sup>4</sup> Now is the time for these groups to assemble expert panels, decide upon competencies and repurpose existing online content or create novel resources.

Medical education is a combination of theory and practical experience, with a great deal of learning condensed into a short period of time. While not all learning can take place online, by moving traditional time-consuming theory-based teaching online there is potential to increase time spent in the clinical environment, arguably the most important part of developing future clinicians. Enabling the best possible learning experience for students requires accessible online resources developed by expert groups. Now is the time to identify the professional bodies best suited to develop MOOCs and encourage them to deliver the future of undergraduate medical education. ■

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### Supporting the NHS using intense transformational change in a charitable specialist palliative care provider

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Editor – We share learning from our intense transformational change experienced during lockdown.

Following the 16 March 2020 announcement, we began urgent preparations to play our part to meet the needs of patients approaching the end of their lives with both COVID-19 and non-COVID-19 terminal illness. Our aims were to protect the NHS and remain true to our charitable mission of caring compassionately for adults with terminal illness.

We responded with pace by redistributing the workforce within our three service areas (inpatient unit, living well and care at home; see supplementary material S2).

On our inpatient unit, we adapted our referral scoring system to favour admissions from hospitals to release acute beds, however our local integrated care system designated our ward as a ‘cold site’, due to the layout and its impact on infection control. By redeploying staff from other areas, we safely opened previously closed beds. Isolation rooms were created, with an adjacent personal protective equipment gowning room.

We drastically reduced visiting hours for all but the imminently dying, so families were connected by daily calls from the multiprofessional team. We also used creative ways to connect patients and families, emotionally and spiritually, by shared objects including decorated pebbles, carved crosses and candles, as well as using video messaging.

The patient and carer group sessions, which our living well service would normally provide, were adapted to video calls. The data in Table 1 shows a dramatic change from traditional face-to-face contacts during the pre-COVID-19 era, to telephone support and video conferencing during lockdown.

The crisis required an expansion of our care at home service to support patients at home and in nursing homes. The advice and referral team increased its hours of operation from 8am–6pm to 8am–10pm. The capacity for weekend specialist advice and care was enhanced with consultant weekend domiciliary visiting to support clinical decision making and end-of-life prescribing. Our

hands-on nursing team (hospice care at home) launched a night visiting service. The care at home data for face-to-face dropped during the first month of lockdown, but bounced back in May, reflecting these additional service developments (Table 1).

The patient and family support team offered practical support through the care after death processes, emotional support via counsellor and a virtual funeral recorded by our chaplains.

The education team developed several free e-training modules on COVID-19, advance care planning and identification of frailty to support colleagues in discussing ceilings of care, do not attempt cardiopulmonary resuscitation and end-of-life care planning. These were taken up well by nursing homes.

Investments in leadership and team working, made over the preceding 2 years, paid dividends in being able to deliver change rapidly. With the government’s £200 million support to hospices nationwide and using our reserves, together with generous contributions from our supporters, some of whom funded specific responses to COVID-19, we have been able to meet the additional costs of service development. We were also indebted to our staff for their positive ‘can do’ attitude.

Learning and refining as we go has been a theme. The changes we made opened our eyes to new ways of working. Teleconferenced meetings and video calls to patients have been exceptionally well received. We have worked hard in the past to break down staff silos, and these melted away as staff found themselves working in new areas.

Having faced and overcome the issues at the peak of the pandemic, we are certainly not complacent as we consider preparations for a possible second wave this coming winter. ■

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### Supplementary material

Additional supplementary material may be found in the online version of this article at [www.rcpjournals.org/fhj](http://www.rcpjournals.org/fhj): S2 – Redistribution of workforce due to COVID-19 pandemic showing the change to the delivery of services.

### Integrating sustainability in medical education

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Editor – We read with interest the article by Vanita Gandhi and colleagues which highlights the importance of integrating sustainability in medical education.<sup>1</sup> We would like to bring to attention a student-led movement founded on the same principles and with incredible potential to trigger change.

Student MedAID is a student-led charity and society affiliated with the University of Edinburgh. We collect unwanted and out-of-date medical resources from hospitals, organisations and members of the public throughout the UK. We then re-distribute them to under-resourced healthcare institutions abroad through medical students on electives, humanitarian health workers and other non-governmental organisations.

To date, we have delivered equipment to 11 different countries, hoping to aid communities in need throughout the world. We have

**Table 1. Services at pre-COVID-19 (November 2019) compared with the first 2 months of the lockdown**

	November 2019	April 2020	May 2020
Telephone calls to Phyllis Tuckwell Hospice Care	3,560	5,941	6,099
Care at home face-to-face contacts	1,337	732	1,014
Care at home non-face-to-face contacts (including virtual)	3,819	5,624	5,788
Living well face-to-face contacts	575	3	6
Living well non-face-to-face contacts (including virtual)	256	483	496