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Undergraduate Summer Research under COVID-19

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The COVID-19 pandemic disrupted all social and commercial sectors, including the delivery of Medical Education. The sudden emergence and global spread of this virus through 2020 forced us to make many adjustments in our curriculum delivery. The continuity in education has only been possible under the “New Normal” through extensive adaptation to content delivery, clinical training, and assessment. The pandemic has accelerated the drive towards technology-enhanced learning and teaching through online tools. Other, non-core learning activities also demanded adaptation, including research electives. Research electives have multiple benefits for students, including enhanced critical appraisal, information literacy and critical thinking skills, undertaking electives can also provide a competitive advantage for

career advancement. In the long term, it helps students develop the ability to make informed clinical decisions using evidence from literature, an essential skill for physicians^{1,2}. Our university's medical curriculum has a compulsory research component in the third year, and we also support a research elective program during the summer. Students submit a paper for an internal conference on completion, and we also encourage external dissemination of research.

Before COVID-19, every year, 30 students participated in faculty-supervised projects under different streams such as hospital-based, laboratory, community-based, systemic and narrative reviews, and campus-based bioinformatics projects. Some students under-took research in overseas locations such as Ireland, United Kingdom, Greece, and Taiwan. These projects often required face-to-face interaction, hospital or campus visits, and sometimes international travel. The pandemic had the potential to erase the research-driven opportunities for many of our students. Instead, we aimed to adapt our research elective program for the "COVID Summer" of 2020. Due to social distancing, restrictions on meetings and gatherings, travel restrictions, risks related to community and hospital visits, we are forced to exclude research streams with such "Old Normal" requirements. In the best interests of students, faculty, and community safety, we endeavoured to offer only projects that could be feasible, completed remotely. We included literature reviews, Cochrane reviews, online surveys, bioinformatics-data science, and secondary data analysis, which can be conducted without contact or travel. This facilitated 29 students to carry out research projects remotely while receiving effective online supervision. We successfully adapted and delivered our Summer Research Program, and facilitated student participation in online conferences and peer-reviewed publications. Adaptability to change is a hallmark of successful education, and students³ ability to adapt to the COVID-19 challenges will help them evolve into successful, adaptable physicians.

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