Incorporating teleoncology practices in the undergraduate medical curriculum

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To the Editor,

We have read with interest the article by Elkaddoum *et al.*, ‘Telemedicine for cancer patients during COVID-19 pandemic: between threats and opportunities’, describing the shift from face-to-face oncology practice to teleconsultations [1]. As UK medical students experiencing the disruptions caused by COVID-19, we appreciate the advantages of teleoncology. However, we fear the transition to teleoncology may further reduce our exposure to cancer specialties. Thus, we would like to take this opportunity to highlight our concerns, discuss strategies and limitations of integrating medical students in teleoncology services and offer solutions to overcome these challenges.

The first cases of COVID-19 were identified in December 2019 in the Chinese town of Wuhan, which later became the first epicenter of a global outbreak [2]. The rapidly spreading virus proved to be particularly dangerous, especially to older individuals as well as those with underlying conditions such as cancer, making these individuals more susceptible to severe complications of the infection [3,4]. Health care underwent an unprecedented change to minimize the risk of viral infection and spread. Teleoncology, the blueprints of which were already in development [5], proved to be an invaluable resource during this time. Initially aimed at diminishing disparities in access to quality cancer care between high-income urban areas and rural, remote districts or low- and middle-income countries [5], teleoncology quickly became the principal means of communication between immunosuppressed cancer patients and oncologists [6]. Indeed, the potential of teleoncology became apparent.

Meanwhile, undergraduate clinical teaching was largely suspended across most countries as universities were forced to close in light of the pandemic [7]. Although the education of all medical specialties was affected, we believe oncology to be disproportionately impacted. Oncology is already an underrepresented specialty in undergraduate medical curricula, with students worldwide reporting limited exposure to oncology specialties, teaching dissatisfaction and low confidence in oncology care, particularly relating to breaking bad news [8]. Student conferences, summer electives and research internships – all of which have faced cancellations amid COVID-19 – significantly influence students’ career interest, especially toward disciplines that feature little dedicated teaching in the UK undergraduate medical curriculum [9]. We are concerned that decreases in oncology exposure will reduce student interest in pursuing oncology as a career because early specialty exposure is associated with specialty interest and career selection [10]. Moreover, the consequences are graver given that clinical placements have irrevocably changed. Even after COVID-19 has subsided, restrictions will likely persist longer in specialties involving immunosuppressed patients such as oncology. Reduced oncology exposure during medical school may diminish student interest in the specialty, resulting in fewer applicant trainees and future specialty attrition. Significant long-term deficiencies may be observed in the cancer workforce, which is already overstrained [11]. Low-quality cancer services and increased physical and mental burden on oncologists may result, contributing to higher rates of physician burnout [11]. Therefore, early integration of medical students in teleoncology is crucial.

The changing face of oncology practices described by Elkaddoum *et al.* necessitates an equal change in undergraduate medical training [1]. Telemedicine offers unique advantages to traditional teaching. Virtual clinics

could increase students' access to oncology, enabling them to practice interviewing and clerking cancer patients while maintaining social distancing measures, reducing the risk of viral contraction and spread, and minimizing personal protective equipment use [1]. Inviting students to attend online multidisciplinary team (MDT) meetings and teleconferences would enhance student's understanding and cultivate specialty interest. Indeed, virtual seminars are effective at facilitating international collaborations and bolstering research during COVID-19 lockdown, and there is an ongoing discussion of replacing in-person conferences with teleconferences in the future [12]. Lastly, creating peripheral cancer care centers, as described by the authors [1], would address student capacity issues currently faced at specialist cancer centers that limit students to brief oncology experiences [13].

Yet teleoncology also has shortcomings. We agree with the authors' concerns regarding the accessibility of technology for both patients and students [1]. Lack of access to personal electronic devices and stable broadband connection may widen social inequalities. Furthermore, although the integration of telemedicine in undergraduate medical teaching would be a valuable substitute for student-patient contact throughout the pandemic, it does not equate to traditional face-to-face clinical placements. Inability to perform physical examinations, difficulty demonstrating empathy and practicing or observing nonverbal communication are noteworthy drawbacks [14]. Moreover, teleconsultations have been shown to increase patient anxiety and discomfort, which could be further exacerbated by the presence of students [14,15]. Last but not least, patient confidentiality is also put at risk [1].

Universities, medical educators and healthcare providers must galvanize efforts to tackle these concerns. We propose the following suggestions. First, if telemedicine is to become a mainstay method of facilitating medical student exposure to cancer patients, medical schools should ensure sufficient student provisions and equal access to online resources. Second, undergraduate medical curricula should be revised to educate and train students on the use of telemedicine systems because students must be proficient in using these technologies as future physicians. Aside from technical training, students should also be educated on the limitations and uniqueness of using television-based systems. Communication skills, such as demonstrating empathy, must be adapted to teleconsultations. Students should be knowledgeable about video-call etiquette and how to set up an appropriate environment for themselves and patients [16]. Moreover, it is essential that upcoming changes in medical training are communicated to patients. If patients are aware of the reasons and the significance of including medical students in their care, they might be more willing to include them and be at ease during teleconsultations. Finally, regarding patient confidentiality, Elkaddoum *et al.* proposed the use of end-to-end encrypted software to prevent unwanted leaks [1]. Although unfamiliarity with this system may initially be an issue, providing dedicated training to students and medical personnel could easily overcome this.

Undergraduate medical oncology teaching in the UK has already been neglected enough amid the current crisis. Educators and physicians must realize the long-term consequences of marginalizing students during this pandemic. Medical students are the future generation of physicians, and thus they must be included in telemedicine promptly, even more so because these technologies are set to become a mainstay in the future. Medical schools must continue to adapt to the new face of medicine amid COVID-19, with larger emphasis placed on the transition to telemedicine education and training, particularly geared toward hospital exposure and clinical simulations [17].

Author contributions

AM Wozniak wrote the original draft and contributed to editing. KS Rallis was involved in conceptualization and editing of the letter.

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