COVID-19: the Emerging Role of Medical Student Involvement

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“Once-in-a-century” events shape those who endure the challenging circumstances [1]. With the current unprecedented emphasis on containment and mitigation surrounding COVID-19, medical students face unique uncertainties and challenges. While not yet physicians, students possess crucial responsibilities in this pandemic. Furthermore, education of future physicians is critical to addressing an expanding gap between healthcare demand and access to care—perhaps to an even greater extent during a global pandemic. During the 1918 influenza epidemic and the Second World War, medical students played a pivotal role by graduating early to support the increasing healthcare demands. While medical students can have a significant impact in the current crisis, careful attention is warranted to ensure students are not exposed to unnecessary or unethical risk and to ensure there is an adequate supply of future physicians to manage recovery efforts and potential long-term impacts of COVID-19 [2, 3].

As Dr. William James Mayo expressed in 1910, “the needs of the patient come first.” Since then, healthcare systems have based care on this sentiment, and it remains the crux of medical education. The normal course of medical training includes countless encounters where students must abstain for the benefit of the patient (i.e., leaving a room where a patient is uncomfortable with a student learner). A pandemic highlights the importance of understanding the balance between education with clinical safety and patient well-being. Following recommendations

from the Association of American Medical Colleges (AAMC) and Liaison Committee on Medical Education (LCME), medical schools have removed students from clinical rotations and transitioned to virtual learning formats. Like other businesses, medical students must appreciate their role as non-essential learners, performing work that often requires duplication. The non-essential label should not discourage or patronize students, rather it reflects a necessary safety precaution for unpaid workers who would otherwise not be protected by occupational safety measures. However, these limitations should not prevent students from trying to help from afar. Nevertheless, education is critical for the mission of academic medical centers and imperative for the future of our healthcare system. Through lessons learned in this outbreak, our healthcare system will be better equipped to face future challenges.

Currently, most schools have suspended in-person didactics, clinical duties, and customary celebrations such as match day and commencement. Their prompt response in an effort to “flatten the curve” of infection rates is commendable [4]. Although students are trained to assist in the care of patients with highly infectious diseases, such as tuberculosis, COVID-19 poses a unique risk to medical student involvement. While medical students provide important tasks for many medical centers and generally fit the low-risk age demographic for severe clinical disease requiring hospitalization, they may, as non-essential personnel and asymptomatic carriers, promote the spread of infection or overconsumption of limited personal protective equipment (PPE) [5]. Additionally, patient encounters by students are often repeated by licensed staff, thereby increasing transmission risk and PPE use with redundant processes in an already overburdened healthcare system. However, with projections of an overutilized healthcare workforce, oversaturated hospitals, and a shortage of medical support staff, medical students could serve as a vital resource for patient care beyond their traditional roles. Novel strategies are needed within student groups and within health systems to optimally deploy

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medical students who variably transition from advanced beginner to competent, perhaps through telehealth, research, or patient care and advocacy activities that do not require direct patient contact or advanced training [6].

Specifically, medical students may assist physicians in non-clinical roles which attendings or residents may not have sufficient time to fill. As thousands of physicians are or will be overloaded with the projected increase in COVID-19 cases, students have an opportunity to serve through virtual patient care. Furthermore, with scientific and clinical understanding, students are well-positioned to act as leading voices through social media about proper social and behavioral practices for virus containment and mitigation. Medical centers would be well-served to use their medical students for both task shifting from overworked physicians and advocacy for public health policies to ameliorate the burden of COVID-19. Possible roles for medical students include (1) curating mass and social media content to teach proper hygiene practices, (2) informing peers through online platforms and word of mouth, who are often in the low-risk 20–30-year-old age demographic, about the importance of self-isolation and social distancing, (3) working with medical center public relations teams to instruct local communities on how to engage with their health system in this uncertain time, be it through teleconferencing, triage locations, COVID-19 testing sites, and hotline access, and (4) where possible, providing basic healthcare services such as blood pressure measurements, as many elderly and vulnerable citizens will be cautioned to avoid entering local stores where they often obtain such services (Table 1).

Given the current limitations on traditional medical student clinical involvement, medical centers could greatly benefit from utilizing students to augment their capacities in innovative ways. However, medical students should not be re-introduced in the clinical environment until the new norms and standardization of student safety and clinical operations are established, including adequate PPE and delineation of appropriate clinical roles for students. The risk-benefit ethical calculus for medical student involvement will shift on longer term horizons as a new workforce of trained and educated residents are needed. Therefore, hybrid models of medical education may serve as a segue during these uncertain times. Importantly, it will be critical to ensure ample educational opportunities exist, as clinical skills and medical knowledge may decline while siloed outside of the traditional healthcare system. Additionally, in this new training arena, there will be new opportunities to learn social and structural determinants of health faced uniquely by virtual patient encounters in pandemic scenarios.

Our current healthcare system faces new and unprecedented challenges and medical education will be affected for the foreseeable future. Given their knowledge base and restricted clinical duties, medical students are uniquely equipped to serve as a voice of leadership to non-medical peers and to mitigate the healthcare system overload through non-traditional medical support. Medical schools and students should jointly seek ways to strengthen their local healthcare systems and engage in community outreach and leadership within their social and professional circles.

Table 1 Potential medical student roles during the COVID-19 pandemic

Activity	Category	Level of risk	Learning attributes
Curating mass content to teach proper hygiene practices	Mass education	Minimal—No physical contact with the healthcare system	Leadership and organization
Educating peers through online platforms about the importance of social distancing	Mass education	Minimal—No physical contact with the healthcare system	Leadership and organization
Working with local medical center to aid in patient care through telehealth	Patient care	Minimal—No physical contact with the healthcare system	Learning an online platform that will likely be used in most specialties for the foreseeable future Taking basic clinical histories and forming an assessment and plan
Providing basic, in-person, healthcare services to vulnerable populations	Patient care	Moderate—Contact with patients requires adequate PPD	Basic in-person history and physical exam skills
Full integration back into the healthcare system to fulfill traditional student roles	Patient care	Moderate to high—Contact with patients and requires adequate PPD	All learning attributes associated with traditional medical student education including clinical, professional, and ethical lessons

Availability of Data and Material N/A

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Code Availability N/A

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