PhysioCamp: Cultivating Leaders Throughout Medical School

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Abstract
To prepare medical students for leadership roles, medical student organizations should provide longitudinal leadership opportunities spanning the entire duration of the medical school curriculum. These long-term roles need to be adaptable to medical students’ changing and busy schedules, provide a robust structure for communication, improve access to resources and mentors, and allow autonomy for individual decisions to facilitate effective engagement as a leader. We describe the design of a student-led organization, PhysioCamp, which facilitates opportunities for longitudinal medical student leadership through an internship program for high school graduates.

Keywords Leadership · Organization · Longitudinal · Communication · Student-led

Background
Physicians often assume multidisciplinary leadership roles in healthcare, business, academic, political, and community settings [1–3]. As future physicians, medical students need practice with exerting agency in leadership roles throughout their professional careers [3]. Through opportunities such as student government, community service, and research, medical students can develop the skills and confidence necessary to step into the multidisciplinary roles awaiting them as physicians. However, there are several barriers to the development of leadership skills during medical school. These include time availability, difficulty with communication, fragmented opportunities for leadership, and scarcity of longitudinal leadership experiences that continue beyond the preclinical years [4–8]. We describe a medical student–led initiative, PhysioCamp, that provides extensive and longitudinal opportunities for medical student leadership development.

Activity
PhysioCamp is a nonprofit that provides free tutoring services and healthcare career exposure to precollege students in the Greenville, NC, area as well as virtually nationwide. PhysioCamp began incorporating medical students in 2017 as an in-person organization with non-clinical (MS1–2) students holding the sessions. In 2019, it expanded to include volunteers from other health profession programs, such as nursing and dentistry. Meanwhile, the high school graduate internship program added official positions (e.g., branch directors, committee leads, and interns) for long-term volunteers to foster a sense of mutual responsibility and a team environment [9]. As PhysioCamp continued, medical students now in their clinical years (MS3–4) began mentoring the pre-health interns. In 2020, PhysioCamp transitioned to a purely virtual platform due to the COVID-19 pandemic, offering virtual tutoring and pre-health information sessions. In 2021, PhysioCamp restarted in-person sessions, implemented formal pre-health advisors for team members, and expanded the virtual sessions offered as per student feedback. Over the past 5 years, PhysioCamp has involved over
40 medical students and over 100 undergraduate student team members.

Figure 1 summarizes the current organizational structure and specific leadership opportunities available within PhysioCamp. Medical students can fill all roles except for the intern roles in the red boxes. High school graduates can apply and interview to fill an intern role. The top two layers (branch directors and committee leads) are typically filled by students who have been involved for at least a year. Students are appointed to these leadership positions by consensus of the current leadership group, and participate directly in all activities for which they are responsible, including communicating with pre-college schools, if applicable. When student leaders graduate, they communicate with the rest of the leadership to ensure their responsibilities will continue to be covered. Non-student roles are filled by professionals (such as physicians) who serve as PhysioCamp advisors, or volunteers who assist with in-person camps or virtual events.

Results

Medical students can participate in PhysioCamp both as volunteers and as team members. Medical students teach content ranging from nutrition and mental health to cardiopulmonary resuscitation and reproduction. These sessions frequently use hands-on models, simulation equipment, and real cadaver organs to engage K-12 students. Medical students and other health professional students also offer in-person and virtual sessions focused on career exposure, talking through practice patient cases and running question-and-answer sessions. Furthermore, medical students have worked as PhysioCamp team members (committee leads, branch directors, and advisors) to ensure smooth operation of the nonprofit. They design and implement projects such as in-person camps, virtual tutoring sessions, and quality improvement initiatives. Medical student team members also function as formal and informal mentors to undergraduate students who are involved in PhysioCamp.

Undergraduate students can participate with PhysioCamp as either volunteers or team members. Undergraduate volunteers account for the majority of PhysioCamp volunteers, serving individually or through their university PhysioCamp club. These volunteers tutor K-12 students both in-person and virtually, draft activities for virtual sessions, and advertise PhysioCamp across social networks. Undergraduate students also work as PhysioCamp team members (interns and committee leads), whose tasks can include making educational materials, conducting outreach, organizing events, and responding to emails.

Our qualitative impressions and periodic surveys indicate that PhysioCamp has made a lasting impression on its K-12 participants, increasing their interest in healthcare careers. These students have also requested more virtual practice patient cases and self-directed question-and-answer sessions with healthcare professionals. Furthermore, we found that K-12 students preferred hands-on and interactive activities over lectures when attending in-person.

Fig. 1 Medical student leadership opportunities within PhysioCamp
Discussion

While its main focus is to improve healthcare career exposure for K-12 students, PhysioCamp creates a unique longitudinal opportunity for medical students to develop their leadership skills. As students progress through medical school, they can adapt their leadership roles to reflect the intensity of their schoolwork, and are encouraged to design projects that can be continued by committee leads and interns even after the medical student moves to a different role within the organization. The large non-medical student workforce within PhysioCamp contributes to project flexibility, as the medical students can delegate project tasks to interns [10]. Therefore, PhysioCamp contributes to the development of students’ leadership skills by encouraging their autonomy and ensuring that the organization is flexible enough to work around the demands of medical education [11]. Furthermore, PhysioCamp allows medical students to be involved in community care regardless of their school’s curriculum [12]. These characteristics distinguish PhysioCamp from other student-led organizations, where students’ involvement typically begins in the first year and leadership is passed off before students begin their clerkships [13].

Communication is an essential leadership skill, especially in patient care [14]. Within PhysioCamp, scheduled communication, like weekly updates and monthly meetings, mirrors professional expectations for physicians [15]. This fosters a culture of regularly checking in with other team members and being mindful of availability changes. Through internal survey results, we found that weekly email check-ins with all PhysioCamp team members improved communication by providing an open space for members to request support for any barriers they face. Additionally, regularly scheduled meetings serve as a forum for team members to talk through complicated concepts, work through any points of confusion, and vocalize new ideas. This continuity of communication builds community within the organization, increasing team member comfort and facilitating mentoring [16].

The continuity of students’ participation in PhysioCamp allows them to gain practice with frequently used leadership methods, including mentoring, coaching, action learning, networking, and experiential learning [11]. In particular, PhysioCamp focuses on action learning and peer networking, via regular meetings with other medical students and pre-health leaders every month. Networking, peer mentoring, and leadership mentoring are fundamental to developing leadership skills, and within PhysioCamp medical students have the unique opportunity of forming network connections as both a senior leader and a peer [17]. On internal surveys, interns reported that they highly valued the interactions, mentorships, and advising that were offered through PhysioCamp. Furthermore, PhysioCamp’s continuity of leadership can give senior medical students, newer medical students, and other high school graduates a chance to learn from each other. Medical students in PhysioCamp also have the opportunity to develop several skills that will prepare them to be a medical educator. While all students will serve in a mentoring role, additional roles allow for creation of curriculum materials and developing new activities for the program [18].

When comparing PhysioCamp’s leadership development initiatives to those described by Till et al. [11], several suggestions by the authors closely aligned with the design of PhysioCamp. For medical student leaders, one of PhysioCamp’s greatest strengths is the flexibility it provides for leaders to pursue their specific interests. PhysioCamp also emphasizes connecting and working with others, particularly with peers or near-peer team members. However, PhysioCamp has not yet created an official leadership curriculum, nor is the program directly integrated into the medical school curriculum, as it is a student-led initiative. As PhysioCamp continues to develop, leadership development will be assessed through formal biannual evaluations. With this, we hope to obtain further evidence for the program’s benefits for medical student leadership development. Additional future initiatives will include creating opportunities for alumni involvement as advisors or members of the board of directors to guide other medical students in their leadership journey. PhysioCamp is also taking steps to track participation trends, both for in-person sessions and virtual events.

In summary, by allowing medical students to stay involved with PhysioCamp leadership throughout their medical education, PhysioCamp has decreased the frequency of leadership turnover, and allowed each of those leaders to develop skills in various avenues: teaching both in-person and virtual events, mentoring both in-person and virtual pre-med students, creating age-appropriate educational materials, organizing in-person and virtual events, and more. These skills will be advantageous when teaching and interacting with medical students in residency and will also be helpful to PhysioCamp alumni entering a career in academic medicine.

Declarations

Research Involving Human Participants and/or Animals N/A

Informed Consent N/A

Conflict of Interest The authors declare no competing interests.

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