

Abstract

Purpose: Although students were removed from clinical settings at the beginning of the COVID-19 pandemic due to concerns of burdening physicians and depleting PPE, some leaders suggested students can be effectively utilized. We aim to quantify the degree to which factors influenced a student's decision to or not to volunteer during the pandemic and to understand their attitudes towards their duty to serve.

Method: A secure web-based survey was distributed to students at 23 different US allopathic medical schools between April and June 2020.

Results: Of the 599 students who completed the survey, 67.6% volunteered in pandemic relief activities and a majority volunteered in non-patient-facing roles. Community service, new skills, and time commitment were top 3 influencing factors for students who volunteered, while risk to others, time commitment, and risk to self were top 3 influencing factors for students who chose not to volunteer. Students interested in primary care specialties agreed to a greater degree that physicians have a duty to serve in pandemic relief efforts.

Conclusions: Medical students in general agreed that they should be allowed to volunteer in COVID-19 related relief efforts. As the United States experiences increases in COVID-19 cases, institutions should involve medical students in balancing the level of acceptable risk with the educational benefits.

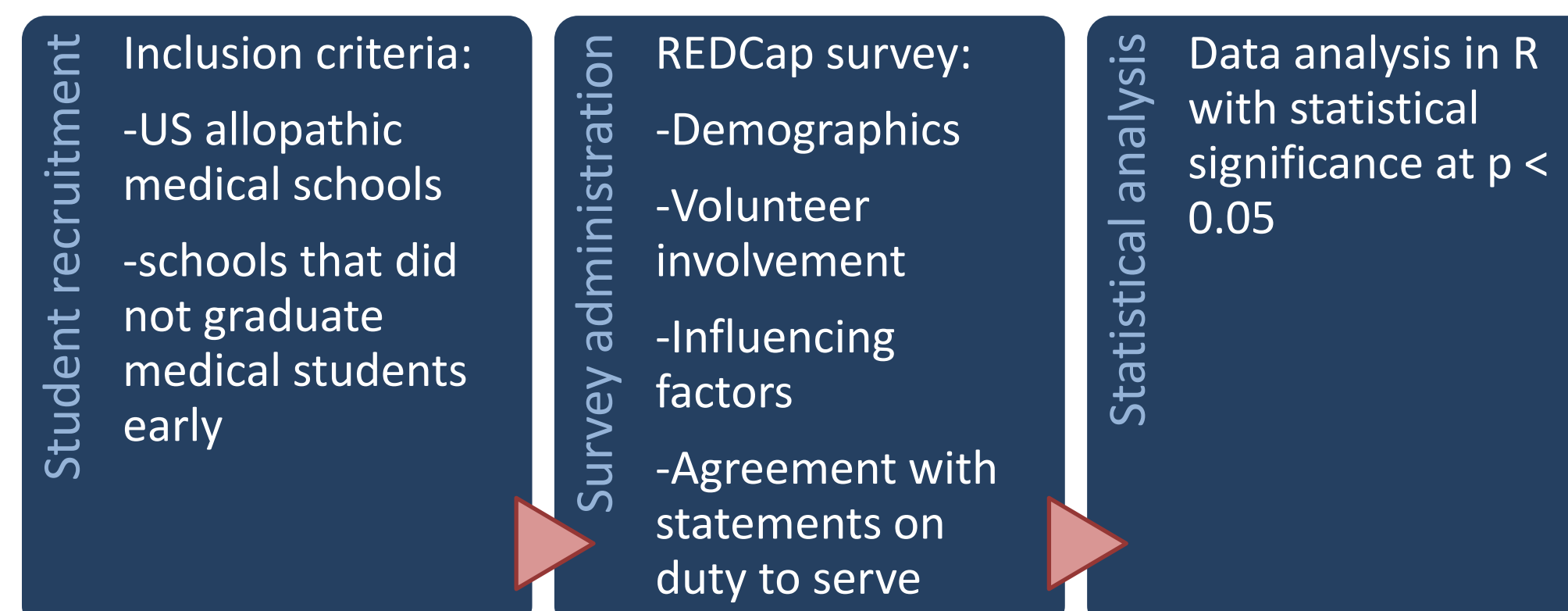
Introduction

The Association of American Medical Colleges (AAMC) initially endorsed medical student clinical involvement, but subsequently issued a statement on March 17th advocating for removal of all students from clinical settings.^{1,2} This has been argued as necessary: medical students deplete personal protective equipment (PPE), may function as vectors of disease, and place additional burden on teaching physicians.^{3,4,5,6} Additionally, in the face of cancelled surgeries and medical appointments, the environment may have diminished educational value.^{5,7} There has been controversy surrounding the AAMC guidelines, as some argue trainees stand to learn a tremendous amount while mitigating workforce shortages.^{5,8} It has been suggested that medical students can assist with outpatient care, non-COVID-19 inpatient care, and even respiratory therapy.^{5,7} Outside of patient care, students have organized efforts to assist the community through providing childcare, grocery pick up, PPE collection drives, and public health department efforts.^{1,5,7,9}

The AAMC instructed that any medical student involvement in patient-facing activities should be voluntary.⁶ Interestingly, the surge of volunteerism from medical students was expected by some who note students are intrinsically motivated by a strong sense of altruism.^{1,10} Others note that volunteers were motivated by concern about lower grades, exclusion from future research opportunities, and even a sense of coercion.⁴ Although narrative publications have discussed the ethical implications of medical student involvement in the pandemic, there have been no studies exploring the motivation behind medical student volunteering.

Our aims were to identify and quantify the degree to which factors influence a student's decision to participate in volunteer activities by different categorical measures, characterize student attitudes towards a choice or duty to serve based on volunteer status, and characterize student attitudes towards a physician's duty to serve based on future residency type. Understanding motivations and attitudes toward volunteering may not only provide an ethical framework in which to discuss medical student involvement in the pandemic, but also help inform future guidelines for medical student involvement in extraordinary situations.

Methods and Materials



Results

Table 1. Baseline demographic characteristics and student participation (N = 599).

	OVERALL (N = 599)
AGE (MEAN (SD))	25.94 (2.5)
GENDER IDENTITY (%)	
MALE	201 (33.8)
FEMALE	389 (65.5)
NON-BINARY	4 (0.7)
YEAR OF SCHOOL (%)	
MEDICAL SCHOOL YEAR 1	117 (19.5)
MEDICAL SCHOOL YEAR 2	135 (22.5)
MEDICAL SCHOOL YEAR 3	181 (30.2)
MEDICAL SCHOOL YEAR 4	131 (21.9)
MEDICAL SCIENCE TRAINING PROGRAM	24 (4.0)
ORAL AND MAXILLOFACIAL SURGERY	2 (0.3)
LEAVE OF ABSENCE	9 (1.5)
VOLUNTEER STATUS (%)	
YES	405 (67.6)
NO	176 (29.4)
NO OPPORTUNITIES AVAILABLE	18 (3.0)

Volunteer Activities

Although 3.0% of all students did not have any available opportunities to volunteer, 67.6% of students indicated that they volunteered with non-curricular activities that aided in the COVID-19 pandemic response. Of these students who volunteered, 79.5% did not work in patient-facing activities but rather worked remotely to support relief efforts. Of the 20.5% of students who chose to volunteer in patient-facing capacities, 44.6% were working with patients who had confirmed active COVID-19 infections.

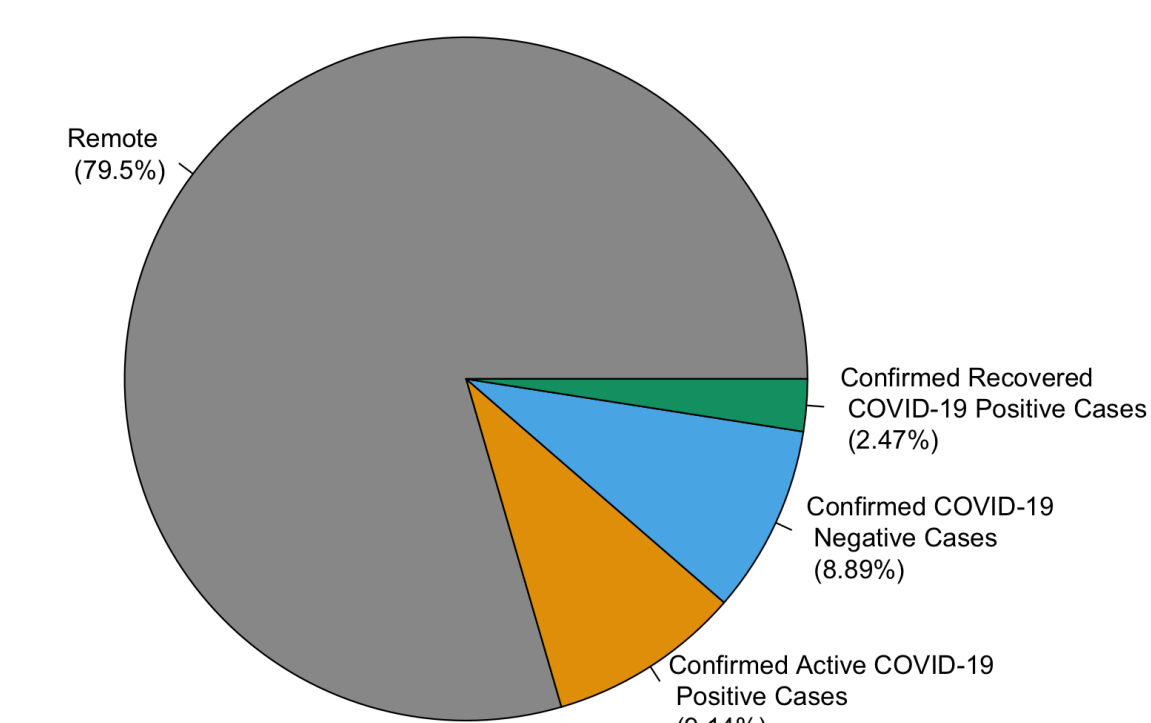


Figure 1. Types of student volunteer involvement.

Results

Motivations for Volunteer Activities

Students who volunteered most frequently rated community service, new skills, and time commitment as a top 3 primary factor in their decision, while students who did not volunteer most frequently rated risk to others, time commitment, and risk to self as a top 3 primary factor in their decision.

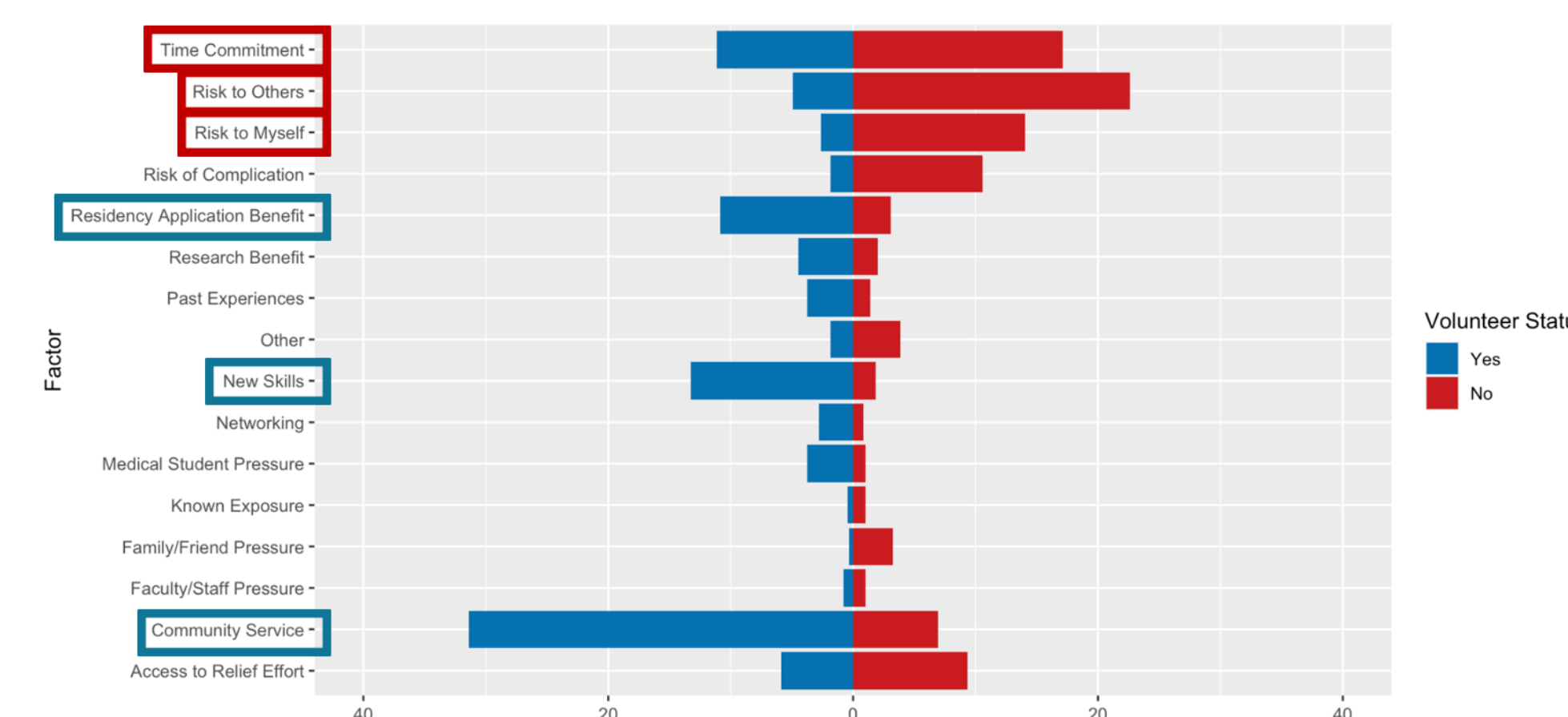


Figure 2. Top 3 factors influencing students' volunteer decisions.

Duty to Serve

Students who volunteered had a higher average rating of agreement with the statement that clinical students should have the option to work in in-person patient care roles with a low risk of disease exposure, non-patient care roles, and remote roles when compared to students who did not volunteer (Mean [SD]; low risk to self: 3.94 [1.16] vs 3.60 [1.17], $p = 0.002$; non-patient care: 4.15 [1.11] vs 3.76 [1.17], $p = 0.012$; remote work: 4.57 [SD=0.73] vs 4.12 [1.00], $p < 0.001$). In addition, students who volunteered agreed to a greater extent with the statement that physicians have a duty to serve in settings of all risk levels (Mean [SD]; high risk to self: 4.51 [0.77] vs 4.19 [1.01], $p = 0.011$; low risk to self: 4.75 [0.60] vs 4.50 [0.85], $p = 0.003$; non patient care: 4.29 [1.11] vs 3.95 [1.26], $p = 0.002$; remote work: 4.60 [0.80] vs 4.34 [0.92], $p < 0.001$).

Students interested in primary care specialties agreed to a greater extent that physicians have a duty to serve in low risk settings and remote settings compared to radiology/pathology and other specialties (Mean [SD]; low risk to self: 4.72 [0.63] vs 4.47 [1.25], $p = 0.027$; remote work: 4.58 [0.80] vs 4.23 [1.03], $p = 0.049$).

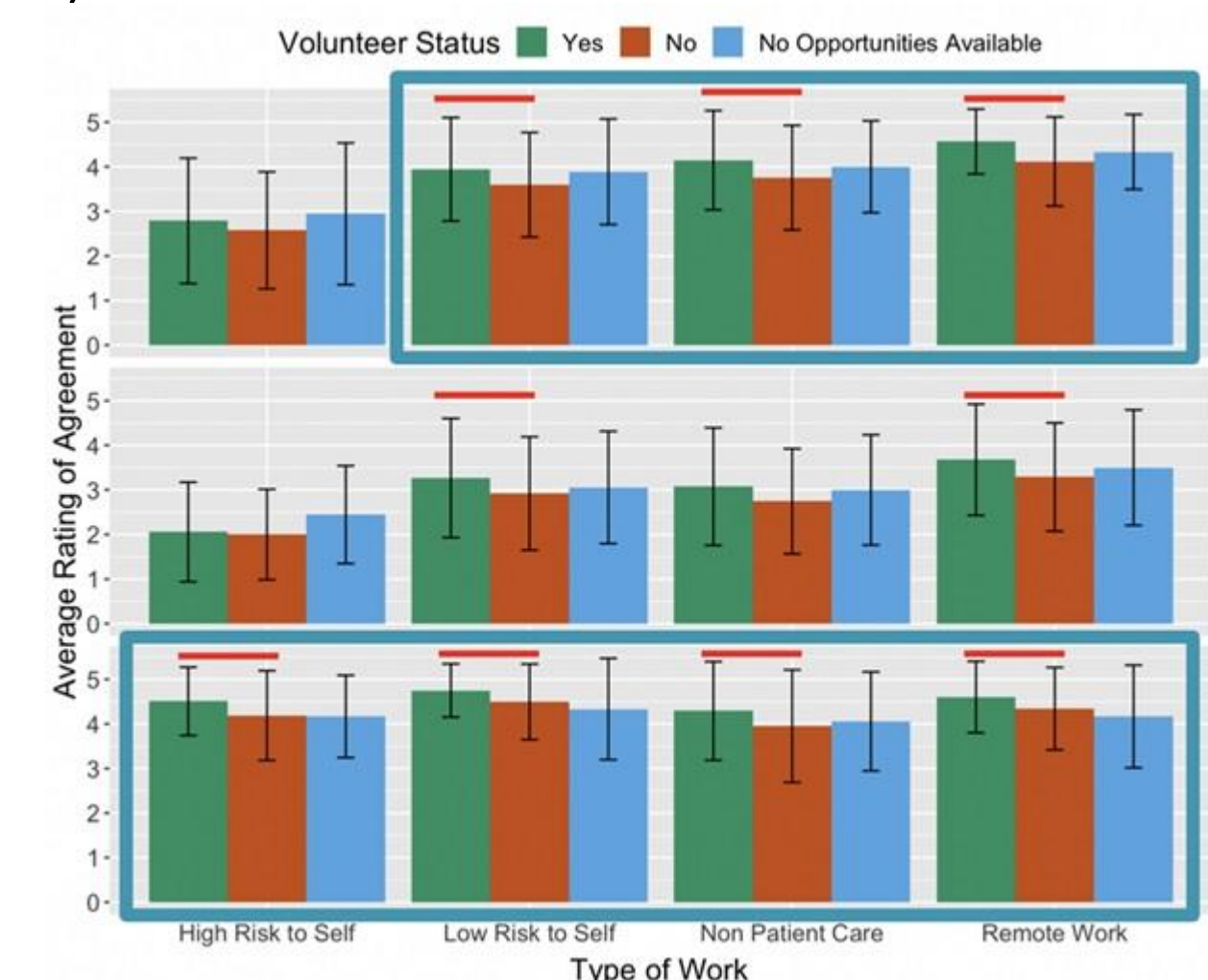


Figure 3. Students' attitudes regarding duty to serve in different settings.

Discussion

Motivation for Volunteering

Our study found that a particular medical student's motivation for volunteering during the pandemic is a combination of altruism, available time, and self-serving nature. In our study, 67.6% of medical students volunteered of their own volition without school-required participation in such efforts. Additionally, students who volunteered had statistically higher interest in serving the community than those who did not volunteer. Self-serving motivators, including additional research opportunities, networking, and benefit to residency applications, account for almost one fifth of the key factors that influence a student's decision to volunteer.

A student's self-selected specialty may reflect their moral agency. Other studies have found that medical students with a lower degree of altruism are significantly more likely to choose high-income specialties.¹¹ When looking at a student's self-selected specialty in our study, primary care specialties agreed to a greater extent that physicians have a duty to serve in low risk settings and remote settings than radiology/pathology and other specialties respectively.

Assumption of Risk by Students

The AAMC recommended that medical students should be excluded from direct patient care activities while medical schools developed plans to safely re-integrate medical students into the clinical space.¹² In our study, students who chose not to volunteer considered risk of exposure to themselves or others as significantly more important factors in their decision than students who did volunteer. The AAMC identified the following as barriers to reintegrating students in clinical settings: health insurance status, testing availability, and inadequate personal protective equipment (PPE). These same barriers may also deter students from volunteering in non-clinical settings. For example, the lack of appropriate masks when delivering groceries or collecting PPE may have also been influences on students' decisions not to volunteer. Even with appropriate PPE, there is still a risk of serious illness or death. The median age of our cohort is 25.94 (Table 1), which falls within an age group that carries up to 6.4% risk of hospitalization and up to 3% risk of death related to COVID-19.¹³ In addition to the risk of significant bodily harm students may assume in volunteering in patient-facing roles during the pandemic, hospitalization or other exclusion from the clinical environment due to COVID-19 may delay a student's ability to enter clinical rotations, obtain licensure, or even graduate from medical school.

Conclusions

Overall, we found that there were different motivating factors for students who decided to volunteer compared to students who did not: community service, new skills, and time commitment were primary factors for students who volunteered, while risk to other, time commitment, and risk to self were primary factors for students who did not volunteer. We also found that motivations for volunteering may change over the course of medical training: three-fourths of third-year medical students and half of fourth-year medical students volunteered for COVID-19 related relief efforts. Compared to students interested in radiology/pathology and other specialties, students interested in primary care specialties agreed to a greater extent that physicians have a duty to serve in low risk settings and remote settings. However, medical students in general agreed that students should be allowed to volunteer in COVID-19 related relief efforts. As large areas of the United States continue to experience increases in COVID-19 cases, institutions should involve medical students in evaluating what the acceptable risks are compared to the ethical educational benefits of student involvement in patient care.

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