Effect of Cardiothoracic Surgery Mentorship on Underrepresented High School Students

Objective
Underrepresented minorities (URM) account for less than 6 percent of physicians and 2 percent of cardiothoracic surgeons. Many structural inequities account for this low representation, including lack of exposure to healthcare opportunities and a paucity of minority role models among URM students. Our goal was to determine the impact of participation in a cardiothoracic surgery-guided mentorship program on perceptions of medicine and surgery by URM students.

Methods
From 2016 to 2022, an academic division of cardiothoracic surgery conducted an annual mentorship program across eight high schools for URM students. In Phase 1, a minority physician visited the participating high schools, discussed life as a cardiothoracic surgeon and obstacles faced during training. In Phase 2, students were invited to the surgical simulation center or microanatomy lab to perform various imaging (ultrasound) and surgical procedures on cadaveric specimens that engaged them in "hands-on" practice. In Phase 3, selected applicants were awarded a summer internship and given a stipend. During the two-month internship, they attended weekly simulation sessions organized by the division of cardiothoracic surgery.

Results
Over the study period, the number of applicants for the summer internship increased from 11 in 2017 to 438 in 2022. Students involved in Phase 2 had a statistically significant increase in post-participation survey scores when asked about interest in becoming a surgeon, choosing a college major and having the manual dexterity necessary to become a surgeon (Table 1). All students involved in Phase 3 described the program as favorable, including comments such as "taught me to set my goals ridiculously high" and "it was important to see people that look like me doing the job that I wanted to do."

Conclusions
Cardiothoracic surgery divisions can positively influence URM students with a structured mentorship program that includes surgical simulation and exposure to minority physicians. Students who participate develop increased self-confidence in their ability to become a physician. Over time, an increased number of URM students may thus express interest and pursue careers in cardiothoracic surgery. Ongoing exposure of URM students to URM surgeons will decrease the "leaky pipeline" and reduce disparities in medicine and surgery.

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Additional Resources
- https://files.aievolution.com/prd/aat2101/abstracts/abs_3748/EffectofCTmentorshipabstractforAATSTable1.docx