

Bias Mitigation in Cardiothoracic Recruitment



Cherie Parungo Erkmen, MD, Lauren Kane, MD, and David T. Cooke, MD

Department of Thoracic Medicine and Surgery, Temple University Health Systems, Philadelphia, Pennsylvania; Department of Pediatric Cardiology, Cardiac Surgery Arnold Palmer Hospital for Children, Orlando Health, University of Central Florida, Orlando, Florida; and Department of Surgery, University of California, Davis Medical Center, Sacramento, California

Coronavirus disease 2019 (COVID-19) disrupted cardiothoracic fellowship recruitment, forcing many training programs to implement remote interviews quickly instead of in-person visits. The Association of American Medical Colleges has since recommended that all residency interviews proceed by phone or through video conferencing. As programs consider challenges posed by COVID-19 in the coming year, this is an opportune time to improve the recruitment process, especially as it relates to overt and implicit bias. A national awareness of race and injustice compels us to look for opportunities to correct institutional bias in our own practice.

Creating an environment of diversity and inclusion is essential to patient care and trainee education. A diverse workforce in cardiothoracic surgery can improve communication and trust with a diverse patient population. Diversity among a workforce also improves collective knowledge, innovation, and problem-solving. An environment of diversity and inclusion in cardiothoracic surgery will be critical to overcoming novel challenges to patient care and surgical education in the future. Inclusive recruitment will bring the best candidates to cardiothoracic surgery training and the specialty as a whole.

Unfortunately, cardiothoracic surgery has a low representation of women and minorities.¹ Reasons for this lack of diversity are multifactorial. Low diversity among cardiothoracic faculty may be discouraging to underrepresented students, medical students, and residents interested in the field. Women and underrepresented minorities may not find role models or mentors to help navigate them to cardiothoracic surgery. In addition, trainees within surgery have reported pervasive racial discrimination, sexual discrimination, and harassment.^{2,3} The environment within cardiothoracic surgery may not appear welcoming to women and underrepresented minorities. Furthermore, as cardiothoracic programs are struggling to meet trainees' educational needs in a rapidly evolving health care environment, recruitment of women and underrepresented minorities may not be a priority. However, the Accreditation Council for

Graduate Medical Education requires training programs to engage in "recruitment and retention of a diverse and inclusive workforce."⁴

The cardiothoracic surgery community is committed to mitigating disproportionately low numbers of women and underrepresented minorities in its training rosters. The Society of Thoracic Surgeons (STS) developed the Workforce on Diversity and Inclusion. This workforce identifies barriers to diversity, works toward potential solutions, and provides a forum of presentations on diversity at the national STS meetings. The American Association for Thoracic Surgery has a Committee of Membership Recruitment, Engagement, and Diversity to enhance an inclusive environment. The STS and Women in Thoracic Surgery sponsor pipeline programs that foster interest in cardiothoracic surgery among medical students and residents. To further this progress, cardiothoracic training programs should promote diversity through purposeful design of a comprehensive diversity policy.

A fair and inclusive recruitment process for cardiothoracic trainees is an essential component of a comprehensive diversity policy. The process of evaluating candidates is particularly susceptible to overt discrimination and implicit bias. Overt discrimination on the grounds of race, color, religion, sex, or national origin violates the Civil Rights Act of 1964. In 2020, the US Supreme Court ruled that gay, lesbian, and transgender people are protected under this act. Nevertheless, discrimination in hiring has not changed, perhaps because applicants rarely report discriminatory or inappropriate hiring practices.⁵ Although antidiscrimination laws theoretically protect applicants, fair hiring practices are usually the result of employers' commitment to uphold these laws. Cardiothoracic programs must critically review recruitment practices to ensure compliance with antidiscrimination laws and promotion of diversity. Cardiothoracic programs may be vigilantly guarding against overt discrimination during recruitment, but implicit bias persistently affects recruitment of trainees.⁶ Implicit bias, or unconscious bias, is an attitude or stereotype that affects actions in an unconscious manner. Programs may overlook outstanding candidates who are underrepresented minorities and/or female, not because of an overt prejudice, but because of an unconscious notion of a cardiothoracic surgeon as White and male. Implicit bias can be mitigated with the organization and design of the application process.^{7,8}

Address correspondence to Dr Erkman, Department of Thoracic Medicine and Surgery, Temple University Health Systems, 3401 N Broad St, Ste 501 Parkinson Pavilion, Philadelphia, PA 19140; email: cherie.p.erkmen@tuhs.temple.edu.

To foster diversity among the cardiothoracic surgery trainee workforce, we propose specific measures for bias mitigation in recruitment:

1. Committing to diversity.⁸ Each program should set a mission, aims, and goals for a diverse pool of trainees. Programs must dedicate resources and personnel to fulfilling the diversity mission. Specific action plans with responsible parties and time lines will help with implementing a diversity and inclusion policy. Regular assessment of progress and areas of improvement will encourage an enduring practice of diversity and inclusion. Programs should share this commitment with candidates, faculty, and trainees at the onset of the recruitment season through recruitment Web pages and communications.
 2. Training in bias mitigation for faculty.^{7,8} People evaluating candidates may have bias or implicit bias. These biases can be “in direct conflict with conscious intentions, values and beliefs.”⁶ For example, a faculty member who is actively committed to promoting women surgeons may have an implicit bias favoring men as surgeons. Faculty should assess tendencies to bias using tools such as the Harvard Implicit Association Test.⁹ Programs can also use educational resources regarding implicit bias offered by their own institutions and the Association of American Medical Colleges Resource.⁶
 3. Consideration of a blinded step in evaluation of candidates.⁶⁻⁸ Gender, race, and even perceptions of first or last names have introduced bias in recruitment. Evaluation that includes a blinded step, a process without knowledge of gender, race, or appearance, increases diversity. In the 1970s, American orchestras implemented an audition process whereby a screen separated candidates from evaluators. This resulted in a notable increase in the number of women chosen. Recruitment of a cardiothoracic surgeon cannot be completely blinded. In fact, an applicant’s background and experience may be fundamental to understanding the motivation and commitment to pursue cardiothoracic surgery. However, evaluation of standardized test scores and publications as well as the training program, and medical school does not require knowledge of race or gender. These criteria can be extracted from an application and evaluated independently of race, gender, and appearance.
 4. Consideration of standardized letters of reference. Letters of reference communicate an applicant’s qualities, experience, and skills to progress to the desired position. In cardiothoracic surgery, these letters are critical to differentiating an abundance of qualified candidates. However, letters of reference introduce the potential for bias from the letter-writer as well as the letter-reader. Evaluation language favors men over women and White applicants over minorities. Letters for male candidates often focus on achievement and leadership with more standout
- adjectives such as “exceptional” and “superb,” whereas those written for female candidates disproportionately focus on physical or personality descriptions such as “delightful,” with fewer standout adjectives.¹⁰ Standardized letters guide each letter-writer to comment on categories such as technical skill, leadership, work ethic, empathy, and professionalism, thus giving letter-readers comparable information. Emergency medicine and otolaryngology have found that standardized letters of recommendations mitigated gender bias.^{11,12} Standardized letters also decreased interrater variability, increased differentiation of candidates, and increased correlation with applicants’ rank. The development of a standardized format for letters of reference would require collaboration and acceptance of cardiothoracic programs and all potential letter-writers.
5. Structured interviews for candidates.⁶⁻⁸ Although interviews are critically important to the selection of residents and fellows, unstructured interviews introduce bias and inappropriate or even illegal questions. In a study of women orthopedic surgeons, 61.7% were asked inappropriate questions about pregnancy and child-rearing during residency interviews.⁵ This alarming percentage did not vary from 1971 to 2015. Furthermore, unstructured interviews have low interrater reliability and poor prediction of on-the-job performance.^{7,8} Panel interviews in which multiple faculty members interview 1 candidate are especially prone to bias. To decrease bias during interviews, programs should favor one-on-one interviews that define criteria to be evaluated (eg, communication skills, clarity of future goals, insight into strengths and weaknesses). Structured questions asked of all applicants establish common evaluation points. Some structured interviews allow for a few ad lib questions. In addition, the program director, or if feasible, multiple faculty members, should meet with each candidate. A perspective of the entire applicant pool enhances the evaluation process and decreases the impact of availability bias. Availability bias occurs when people favor judgments based on the most available data. An evaluator is more likely to influence the application of someone they interviewed over another candidate who was not interviewed.
 6. Standardized evaluations.^{7,8,10} Faculty should collaborate to categorize and prioritize the evaluation criteria according to the program values. Standardized evaluation forms can guide faculty to evaluate each applicant according to these criteria. Subjective evaluations such as “fit” can be an independent category, but it will not necessarily influence other criteria such as research or quality of training. Standardized evaluations mitigate confirmation bias, which is the propensity to make a decision based on previous experience, more specifically deciding on a candidate based on a stereotype of a cardiothoracic

surgeon. Because implicit bias is more likely to manifest in quick or impulsive judgments, faculty should reflect on comments and written evaluations to ensure intended opinions are free of implicit bias. Programs should consider sharing evaluation criteria and the format of evaluation with applicants. Candidates gain confidence in a program that is transparent and appearing fair in selection.

7. Prevent 1 opinion from dominating a candidate's overall evaluation, often called conformity bias.⁸ Faculty should complete evaluations before group discussions of candidates to prevent conformity. Discussions of candidates should include input from all who evaluated them. Program leadership should cultivate differing opinions and the discussion of the data that support the opinions. Thoughtful discussion enhances selection based on data instead of quick or uncontested judgments prone to bias.
8. Speak up and speak out. Program leadership should establish that discrimination is unlawful and the selection process will strive to be inclusive of race, gender, and sexual orientation. Programs should foster an environment in which unfair, biased, or discriminatory comments or actions can be addressed and corrected. Raising questions about bias and discrimination requires courage regardless of whether it comes from faculty, trainees, or applicants. It may incite conflict or unintentionally offend people. However, unchecked biases can erode trust and discourage a diversity of opinions. Program leadership should take responsibility for respectful discussion of dissenting opinions during evaluations.
9. Consulting diversity and inclusion officer or representative. Most academic institutions have offices of diversity and inclusion that can provide evidence-based best practices for recruitment. In addition, the STS, American Association for Thoracic Surgery and Women in Thoracic Surgery have dedicated personnel to promote diversity. Diversity officers can provide a helpful perspective on recruitment strategies from other institutions or specialties. This is particularly helpful in the development of recruitment materials and job descriptions. Language of job descriptions can unintentionally discourage women and underrepresented minorities. For example, recruiting for a "chairman" establishes a bias toward men, but "chair" is gender neutral. In cardiothoracic surgery, even the position of "fellow" asserts a bias toward men. Although it is unlikely that applicants for fellowship would be discouraged by a job description, the language used in cardiothoracic surgery should not perpetuate a stereotype.
10. Collect data. After the recruitment has concluded, programs should ask for feedback from candidates and evaluators to guide fair and productive recruitment practices. Programs should collect demographic and academic data on the applicant, interview, and trainee pool. Program leadership should ensure that these results are congruent with

their programmatic mission for diversity. Further collaborative research regarding fair recruitment practices among cardiothoracic surgery training programs will promote diversity and inclusion in our field.

Recruitment for cardiothoracic surgery training programs is rapidly evolving. Even before COVID-19, the US Medical Licensing Examination announced that the Step 1 examination will be pass-fail and no longer a means to stratify candidates for residency or fellowship. Although fellowship programs will be less affected by this change, there will be greater emphasis on evaluations of clinical performance in the future. Coronavirus disease 2019 introduced travel restrictions, meaning that candidates will have fewer away rotations and less experience outside their home training institutions. This will affect both clinical evaluations and letters of recommendation. Social distancing and advances in technology have facilitated virtual interviews. Candidates will have fewer limitations of time and money, which is an opportunity to promote fair access to interviews at more programs. The number and diversity of applicants to each institution may increase. Training programs have the perennial challenge of choosing trainees from a large pool of qualified candidates but an added challenge of changes to examination data, away rotations, and interviews. As recruitment for cardiothoracic surgeons evolves, we encourage a critical review of existing practices that may introduce discrimination or bias. We outline some strategies to mitigate bias in recruitment in the hope of promoting a diverse and inclusive professional community for the future.

Bias mitigation in recruitment is only 1 strategy to improve diversity of the cardiothoracic workforce. Meaningful change toward diversity will require bias mitigation in processes of mentorship, career development, compensation, and promotion. A difficult but necessary first step toward an environment of inclusion is the correction of discrimination and harassment in our field.^{3,4} While law enforcement and criminal justice systems are under scrutiny for racial discrimination, our field should evaluate our own conduct. Now is the time to question a persistent disparity of diversity in cardiothoracic surgery. Are we a reflection of disparity in our society as a whole? Is there institutional bias that drives unfair practices? Most important, who among us will take responsibility for change? We hope that challenges of COVID-19 and introspection regarding discrimination will motivate meaningful changes that promote diversity and inclusion within cardiothoracic surgery.

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