

Program Directors Survey on Diversity in Cardiovascular Training Programs



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ABSTRACT

BACKGROUND Women and minorities are under-represented in cardiovascular disease (CVD) specialties. It remains unknown how characteristics of the CVD learning environment affect diversity and how program directors (PDs) approach these critical issues.

OBJECTIVES The second annual Cardiovascular PD Survey aimed to investigate characteristics of the CVD learning environment that may affect diversity and strategies PDs use to approach these issues.

METHODS The survey contained 20 questions examining U.S.-based CVD PD perceptions of diversity in CVD and related characteristics of the CVD fellowship learning environment.

RESULTS In total, 58% of PDs completed the survey. Responding programs demonstrated geographic diversity. The majority were university-based or -affiliated. A total of 86% of PDs felt diversity in CVD as a field needs to increase, and 70% agreed that training programs could play a significant role in this. In total, 89% of PDs have attempted to increase diversity in fellowship recruitment. The specific strategies used were associated with PD sex and the presence of under-represented minority trainees in the program. PDs identified lack of qualified candidates and overall culture of cardiology as the 2 most significant barriers to augmenting diversity. A majority of programs have support systems in place for minority fellows or specific gender groups, including procedures to report issues of harassment or an unsafe learning environment. PDs identified shared best practices for recruitment and implicit bias training, among others, as important resources in their efforts to support diversity in CVD training.

CONCLUSIONS Diversity is important to CVD PDs. They are striving to increase it in their programs through recruitment and strategies directed toward the fellowship learning environment. The CVD community has opportunities to standardize strategies and provide national resources to support PDs in these critical efforts.
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**ABBREVIATIONS
AND ACRONYMS****ACC** = American College of Cardiology**CVD** = cardiovascular disease**PD** = program director**URM** = under-represented minority

Women and minorities are underrepresented in cardiovascular disease (CVD) as a specialty, including in CVD training programs (1–3). Differences in career preferences, workplace experiences, and culture and perceptions of the field of CVD have been cited as potential contributors to the lack of gender diversity (4–6).

A lack of racial and ethnic diversity also exists across medicine (7). Numerous medical organizations have called for increased diversity in the physician workforce to improve innovation and serve an increasingly diverse patient population (1,8). Despite its importance, data regarding drivers of diversity specific to CVD are limited. Characteristics of the CVD learning environment regarding diversity and the approaches fellowship program directors (PDs) employ to affect diversity remain undefined.

To address this question, the American College of Cardiology (ACC) Cardiovascular Program Directors and Graduate Medical Educators Section administered the second annual Cardiovascular PD Survey in 2019. This survey aimed to understand CVD PD perceptions of diversity, barriers to diversity, and solutions to overcome these barriers in CVD training. This survey also sought to identify characteristics of the CVD learning environment that may affect diversity.

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METHODS

Survey questions were developed through an iterative process by members of the ACC Cardiovascular Program Directors and Graduate Medical Educators Section with expertise in medical education. The survey was reviewed by ACC staff with expertise in survey design prior to distribution. The survey contained 34 questions, 20 of which focused on CVD PD perceptions of diversity in training programs and characteristics of the CVD fellowship learning environment that might affect diversity. The remaining questions collected demographic information about CVD fellowship program trainees and leadership. The survey defined diversity as *diversity of gender and diversity of racial and ethnic populations that are under-represented in the medical profession relative to the general population* (9).

The survey was sent to PDs of all U.S.-based CVD fellowship programs, identified through the database of the Accreditation Council of Graduate Medical Education. A program-specific link was sent by e-mail with 4 subsequent e-mail reminders. The survey was open from May 30, 2019, to July 15, 2019. Program type was defined as university-based (majority of

TABLE 1 Characteristics of Responding Programs

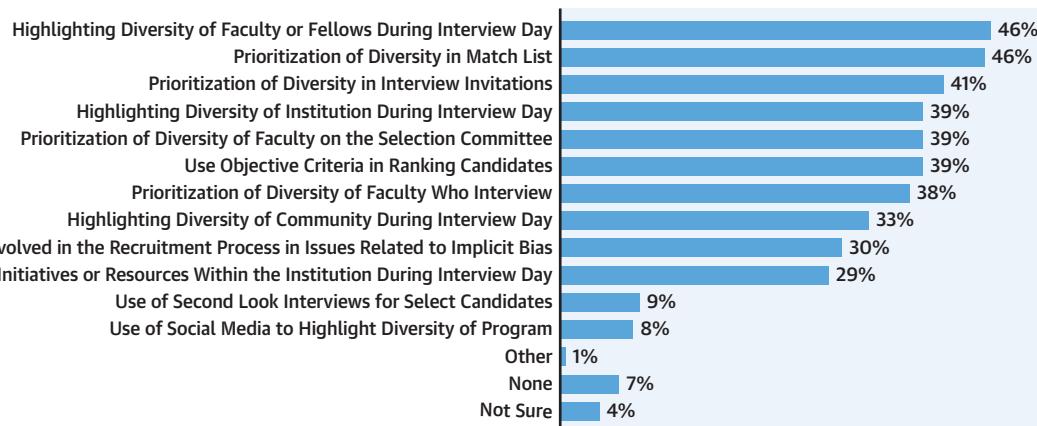
Region	
South	33
Northeast	30
Midwest	25
West	13
Type	
University-based	54
University-affiliated	34
Community	9
Military	2
Size	
Small (1–10 fellows)	30
Medium (11–17 fellows)	38
Large (≥ 18 fellows)	32
Program director gender	
Women	25
Men	75
Program director ethnicity	
Caucasian	60
Asian	21
Hispanic	7
African American	1
Declined to answer	10
Female fellows in program	
By percent of total	
None	3
1%–25%	49
26%–50%	45
>50%	3
By total number	
0	3
1	17
2–3	31
4–5	27
6–10	18
>10	3
URM fellows in program	
By percent of total	
None	30
1%–25%	56
26%–50%	9
>50%	5
By total number	
0	30
1	25
2–3	26
4–5	15
>5	4

Values are %.

URM = under-represented minority.

experience is in a hospital that is the primary affiliate of a medical school), university-affiliated (majority of experience is in a community-based hospital that is affiliated with, but not the primary affiliate of, an academic medical center), community, and military. These definitions are in accordance with those used

FIGURE 1 Strategies for Addressing Diversity in Recruitment



Program directors identified strategies their respective training programs use to increase diversity in recruitment.

by FREIDA, the American Medical Association Residency and Fellowship Database. Program size was defined as small (1 to 10 fellows), medium (11 to 17 fellows), and large (18 or more fellows). Data was collected in a deidentified manner using Verint EFM version 15.1 (Melville, New York). Data was analyzed using SPSS version 23 (Armonk, New York).

RESULTS

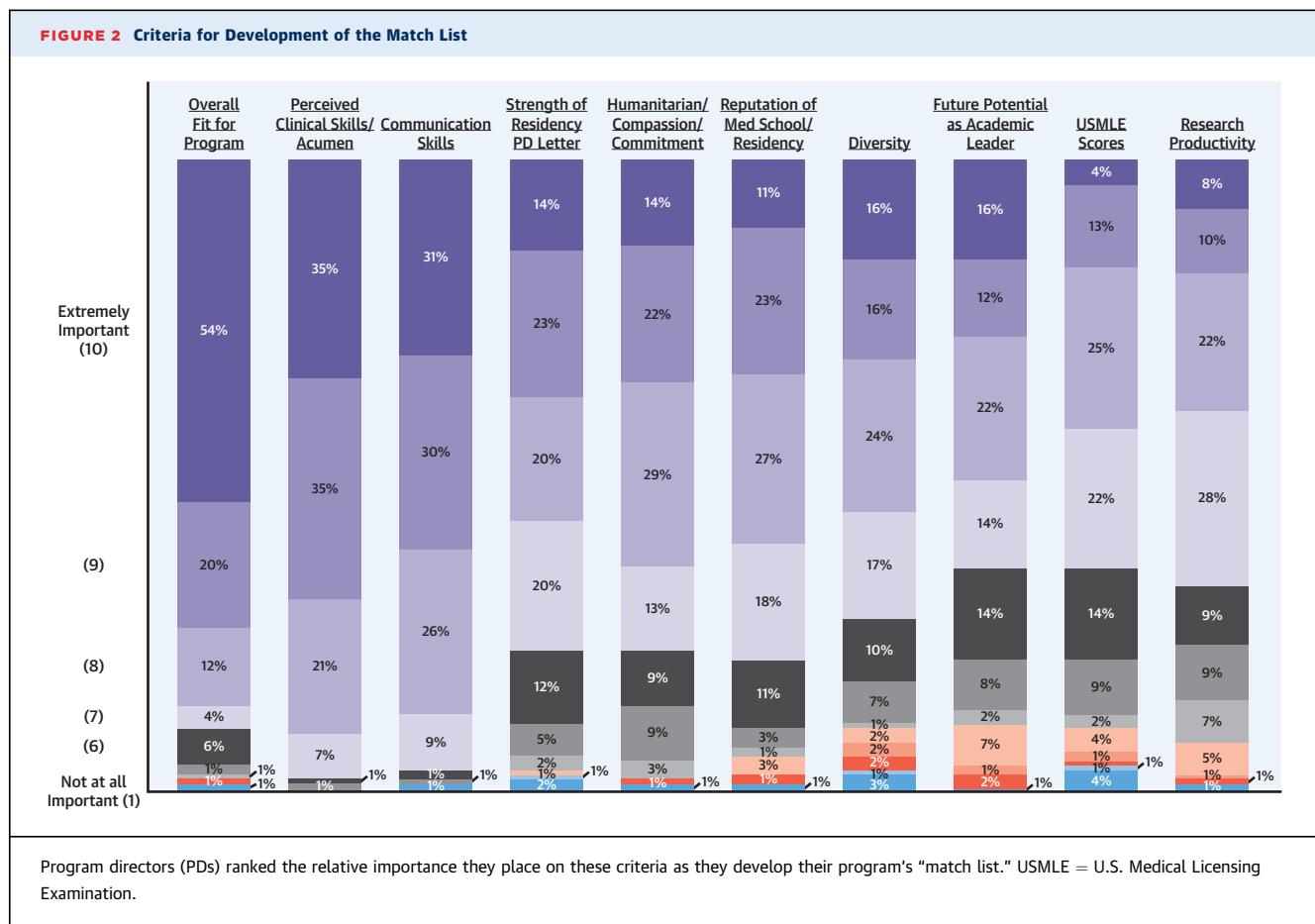
Of the 237 program directors surveyed, 138 (58%) completed the survey. Most of the responding PDs were university based or affiliated. PDs that did not respond were more likely to be in community programs (23%) and less likely to be in university-based programs (39%) than those who did respond (9% and 54%, respectively). In total, 75% of responding PDs were men and 60% were white. A total of 97% of responding PDs had women fellows in their programs; 70% had under-represented minority (URM) fellows. The geographic distribution of programs that did not respond was similar to those programs that did. Characteristics of the responding programs are shown in **Table 1**.

PD PERCEPTIONS OF DIVERSITY. In total, 86% of responding PDs felt that diversity in CVD as a field needs to increase. A total of 70% of PDs felt training programs can play a significant role in this, which was more often the case in programs with URM fellows (74% vs. 62% in those without), programs with female PDs (74% vs. 69% with male PDs), and large programs (84% vs. 57% for small and 69% for medium

programs). In total, 24% of small programs feel that CVD as a field is sufficiently diverse, compared with 13% of medium and 5% of large programs. When asked if their training program aims to increase diversity and has a plan to do so, 35% of PDs responded that they do. This was more likely in programs with URM fellows (41% vs. 21% in those without), and large programs (48% vs. 29% for both small and medium programs). In total, 36% of responding PDs aim to increase diversity in the program but are not sure how to do so, and 20% of responding PDs felt that their training program is sufficiently diverse. The remaining PDs (9%) were unsure or did not feel that diversity should be considered in the composition of training programs.

STRATEGIES FOR DIVERSITY IN RECRUITMENT. A total of 89% of PDs have used a strategy to increase diversity in fellowship recruitment. The most common strategies are highlighting the diversity of faculty or fellows during the interview day, prioritizing diversity in developing the match list, and prioritizing diversity when offering interview invitations. Few programs use second-look interviews (9%) or social media (8%) to highlight diversity of their programs (**Figure 1**).

The most commonly reported strategies to support diversity vary depending on the presence of URM fellows in a program, PD gender, and program size. Prioritizing the diversity of faculty who interview/serve on the selection committee, training these faculty in implicit bias, and highlighting diversity initiatives at the institution are all more common in

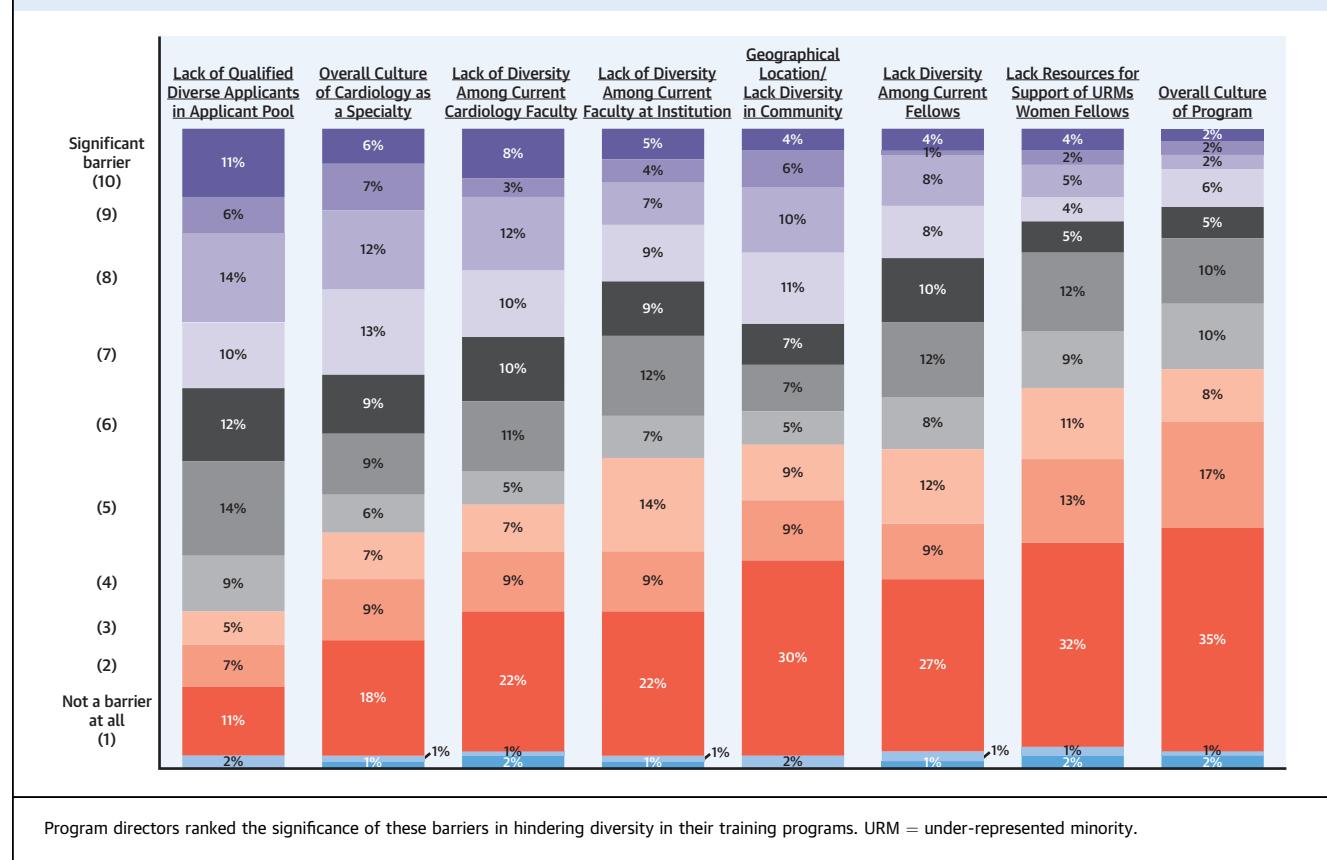


programs with URM fellows (43%, 35%, and 34%, respectively) compared with those without (29%, 19%, and 17%, respectively). Female PDs more commonly highlight the diversity of faculty or fellows during the interview day (53% compared with 44% of men PDs), whereas male PDs are more likely to prioritize diversity in the match list (49% compared with 35% of female PDs). Programs in the South are less likely to highlight diversity of the institution (29% vs. 56% in the West, 47% Midwest, and 37% Northeast). Programs in the Northeast are more likely to highlight diversity in the community (46% vs. 32% in the Midwest, 27% South, and 22% West). In free text comments, multiple PDs reported local efforts to increase interest of URM residents, medical students, and younger students in medicine and cardiology.

A large majority of programs (86%) have female faculty present at the discussion and/or ranking of applicants. About one-half (54%) have URM faculty present. As noted in the previous text, this is more common in programs with URM fellows. In total, 27% of programs do not have any URM faculty in their division or department to include in the recruitment process.

CV PDs report that the 3 most important criteria for developing a match list are overall fit of the candidate with the program, perceived clinical skills, and communication skills. A total of 54%, 35%, and 31% of PDs reported these factors as extremely important, respectively. These criteria did not differ depending on presence of URM fellows in the program, PD gender, program size, program type, or geographic region. The least important factors were research productivity and U.S. Medical Licensing Examination scores (Figure 2). Larger programs were more likely to emphasize reputation of medical school and/or residency, diversity, and future potential as an academic leader than medium or smaller-sized programs. In free text responses, respondents frequently cited a chief residency, geographic location of the applicant, applicant ties to the region, and diversity as important considerations.

BARRIERS FOR DIVERSITY OF FELLOWSHIP. PDs identified lack of qualified diverse candidates in the applicant pool and overall culture of cardiology as the 2 most significant barriers to diversity in their fellowship program. This view was more strongly

FIGURE 3 Perceived Barriers to Diversity in Training Programs

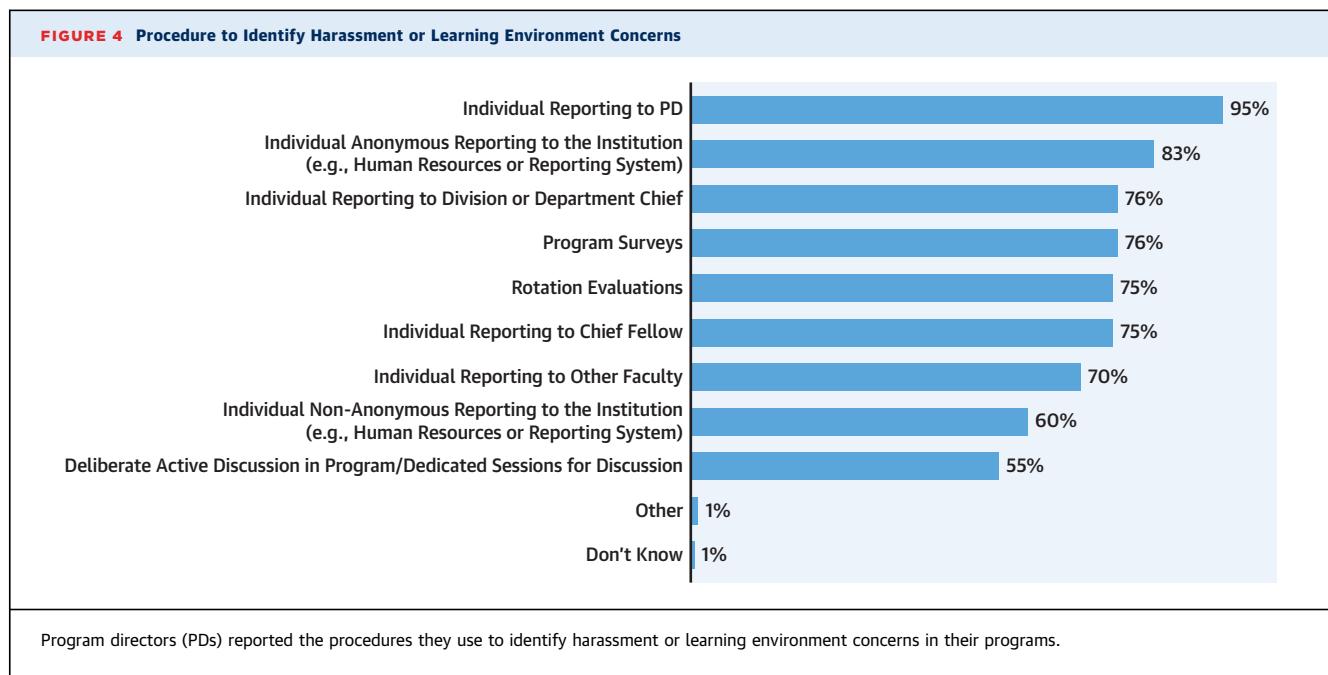
associated with programs with female PDs and large programs. Lack of diversity in faculty and lack of diversity in the program's surrounding community were the next most significant barriers. The least significant barrier was the overall culture of their training program itself (Figure 3).

SUPPORT SYSTEMS FOR UNDER-REPRESENTED GROUPS.

PDs were asked about the presence of specific support systems for minority or specific gender groups at their institutions. An office of diversity and inclusion is more common in programs with female PDs (82% compared with 58% with male PDs), in large programs (95% compared with 63% in medium and 31% in small programs), and in university-based programs (80% compared with 59% in university affiliated programs). Institutional resources to support minority- or gender-specific needs and formal mentorship or sponsorship programs are more common in programs with URM fellows (64% vs. 31% in those without and 44% vs. 31% in those without, respectively). Formal mentorship or sponsorship programs are also more common in university-based (53%) programs than university-affiliated (25%).

Program size was related to the presence of institutional resources for minority groups or gender-specific groups (38% for small, 52% for medium, 70% for large programs), peer support groups (36% for small, 44% for medium, 66% for large programs), and formal mentorship or sponsorship programs (21% for small, 38% for medium, 59% for large programs).

All PDs report multiple systems in place to identify or report issues of harassment or an unsafe learning environment (Figure 4). Most programs offer educational resources to fellows on maintaining a safe learning environment (94%), harassment (93%), and diversity (90%). The most common resources for educating faculty on harassment and maintaining a safe learning environment are institution-wide educational sessions (74%), PD meetings with individual faculty as needed (64%), and referral of faculty to institutional support programs or resources (56%). Most programs manage incidents of harassment toward fellows or an unsafe learning environment through direct discussion between the PD and the fellow (91%). Fellows are also frequently referred to an institutional structure such as human resources



(86%) if concerns arise. In total, 28% of programs refer the fellow to faculty with a common background.

RESOURCES FOR DIVERSITY. PDs identified resources that would be useful in their support of diversity (Figure 5). Over one-half felt that best practice tools for interviewing and evaluating candidates would be helpful (57% and 51%, respectively). Almost one-half of PDs reported that implicit bias training modules, guidance establishing mentoring programs, policies addressing parental leave, and policies regarding harassment would help their effort.

DISCUSSION

CVD PDs recognize diversity as an important issue in cardiology (Central Illustration). Most PDs feel that training programs can contribute to efforts to increase diversity and aim to do so in their program. The majority of PDs have used specific strategies to increase diversity in the recruitment of fellows, although many do not currently have a specific plan to do so.

Female PDs, PDs of programs with URM fellows, and PDs of larger programs are more likely to agree that training programs can play a significant role in increasing diversity in CVD, and these programs are more likely to report diversity among their fellows (4). Interestingly, our data suggest these programs are also more likely to use specific strategies to augment

diversity in fellowship recruitment. These data offer insight into initiatives that may enhance efforts to recruit diverse applicants.

PDs identified resources and tools that would facilitate their efforts to increase diversity in recruitment and optimize the learning environment in their programs. Opportunity exists for national organizations such as the ACC to develop and widely disseminate such resources. Based on PD preferences in our survey, priority could be placed, for example, on sharing best practices for recruitment and offering implicit bias and harassment training.

In developing a rank list for matching fellowship candidates, PDs cite overall fit for the program as the most important consideration, regardless of program size or diversity. This is an important topic to consider, as “fit” is a complex concept without a uniform definition across, or even within, programs. Hiring based on “cultural fit” has been a historically common idea in many professions in the belief that optimal “fit” will increase likelihood of success of the individual hired. However, seeking cultural fit can introduce bias, including unconscious bias, and perpetuate similarities within a group, including similarities of ethnicity, gender, geographic background, and socioeconomic background. Awareness among PDs regarding the broad limitations of “cultural fit” and efforts to rely on objective predictors of success may help minimize the impact of this “fit” criterion.

FIGURE 5 Useful Resources for Supporting Diversity and Inclusion in Programs



Program directors ranked resources according to their perceived utility for supporting diversity in their programs. ACGME = Accreditation Council for Graduate Medical Education.

Resources to support development of fellows from under-represented groups can affect their career trajectory and retention (10) and influence the learning environment of training programs. The majority of PDs are aware of resources to support minority or gender groups at their institutions. Not surprisingly, these resources are less common in

small programs. Therefore, opportunities may exist for larger programs and national societies to provide guidance and support to smaller programs that have fewer locally available resources.

PDs report a lack of qualified candidates in the applicant pool as a significant barrier to diversity in training programs. This perception may stem from

CENTRAL ILLUSTRATION Addressing Diversity in Cardiovascular Disease Training

perceptions Most Program Directors agree diversity in CVD needs to increase and feel training programs can play a significant role

actions Most programs have support systems for under-represented groups and have used strategies to increase diversity in recruitment

needs Program Directors identified sharing best practices for recruitment and implicit bias training as resources that would aid their efforts to increase diversity in CVD

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Perceptions, actions, and needs of program directors regarding diversity in cardiovascular disease (CVD) training.

both the number of diverse applicants and varying definitions of “qualified.” These concepts warrant further exploration, as the definition of qualified may vary across programs and include both subjective and objective criteria. PDs also cite the overall culture of CVD as a significant barrier to diversity. Interestingly, they cite the culture of their individual programs and learning environment as the least significant barrier. PDs also acknowledge lack of diversity among faculty at their institution as an important factor, which is not unique to CVD (7). It is worth noting that, in this survey, only 1% of PDs were African American, 7% were Hispanic, and 25% were women, demonstrating an opportunity to improve diversity in program leadership. These issues speak to the pressing need for CVD as a field to attract a more diverse applicant pool and to improve the perception of CVD and its subspecialties as fields that welcome a broad group of talented physicians regardless of individual background.

STUDY LIMITATIONS. The survey instrument has not been validated, although we used an iterative process to develop the questions to ensure their clarity (11). Not all programs responded to the survey, but our relatively high response rate increases the likelihood that our survey collected a nationally representative sample of programs. The majority of responding programs were university-based or -affiliated, which may affect the generalizability of our findings. Finally, data on program size is not available for nonrespondents, limiting our ability to compare respondents to nonrespondents by this characteristic.

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CONCLUSIONS

Diversity is important to CVD PDs. They are striving to increase diversity in their programs, both through recruitment and strategies directed toward the fellowship learning environment. The CVD community has a unique opportunity to standardize strategies and provide national resources to support PDs in these efforts.

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PERSPECTIVES

COMPETENCY IN SYSTEMS-BASED PRACTICE:

There is broad support among fellowship PDs for prioritizing diversity in training. Efforts are underway to increase the proportions of women and URM and incorporate measures that ensure the success of these groups.

TRANSLATIONAL OUTLOOK: Additional research is needed to clarify best training program practices to improve diversity in cardiovascular medicine.

KEY WORDS cardiovascular training, diversity, graduate medical education