# Strategies to Increase Diversity in Surgical Residency

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## Abstract

*Purpose* Residency programs are now more than ever attuned to the need to create a more diverse surgical workforce and combat the structural barriers that may prevent entry and retention of trainees from diverse backgrounds. The following provides several evidence-based strategies programs can implement to achieve their diversity, equity, and inclusion goals.

*Recent Findings* Strategies to increase diversity span the recruitment, selection, and ongoing support phases of the trainee lifecycle. Ensuring sufficient and accurate information on program websites and strategic recruitment strategies with schools graduating high percentages of underrepresented minorities can help ensure programs receive applications from a diverse cohort. De-emphasizing reliance on traditional selection strategies and tools known to promote inequity will also ensure that all applicants have an equal opportunity to enter the program. Finally, ongoing support mechanisms, such as fair and transparent data monitoring, mentoring, and continued education can ensure that the program provides an environment for all to thrive.

*Summary* Programs seeking to enhance the diversity of their residency programs must consider their practices and policies from a recruitment, selection, and ongoing support standpoint. Unfortunately, there are no "quick fixes." Creating a thriving culture for diversity, equity, and inclusion requires intentional focus and allotment of time and resources.

**Keywords** Diversity · Recruitment · Selection · Fit · Inclusion · Equity

## Introduction

The recent (and long overdue) awakening to systematic racism in the United States has brought with it a focused attempt to create more equitable opportunities for all seeking entrance into the surgical community. As a result, programs and departments are investing time reviewing their historical selection and performance data, creating new strategies for attracting applicants from historically underrepresented groups, and investing resources to ensure ongoing support and inclusion for all members of their community. The following sections provide an overview of evidence-based recruitment, selection, and ongoing support strategies to aide the surgical community in achieving its diversity mission.

## Recruitment

The Attraction-Selection-Attrition paradigm [1, 2] suggests that applicants are more attracted to organizations where prospective colleagues are similar to themselves, that organizations are more likely to select individuals who align with those who have traditionally been successful in their program, and that those who do not meet the

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traditional mold often exit. This means that programs seeking to enhance diversity when little exists at baseline will have to develop robust and intentional resources, policies, and procedures to effectively create a more diverse workforce composition. The following outlines strategies for enhancing recruitment efforts to attract a more heterogeneous applicant pool.

## Internal Review

Prior to developing any strategic recruitment plan, training programs must first perform an in-depth internal review of their program's culture, values, and future plans for growth and evolution. Just as not all applicants are created the same, not all programs are created the same. Defining these organizational attributes will help the program better understand the types of individuals who will thrive in their environment so that they can (1) accurately market their program and (2) maximize person-organization fit (P-O fit). P-O fit describes the extent to which an individual's competencies, values, and preferences are compatible with the organization's core values and offerings [3, 4] and has been linked to higher job satisfaction, job performance, and organizational commitment along with decreased turnover. [3–7] Thus, to ensure a happy and productive resident group, programs must first organize data on their own culture, values, and goals for growth. Programs can then use these data as a starting point for accurately marketing their program to prospective applicants, understanding what applicant attributes and values will be the best fit (either complementary or supplementary [8]) for the program, and creating outreach and screening methods accordingly.

## Information Sharing

After a program has performed a thorough internal exploration of their program's strengths and needs, they can then begin to share relevant information with prospective applicants. By and large, much of this information is gleaned by applicants through organizational websites. Indeed, organizational websites are often the main source of information for applicants and can provide a positive first impression and communicate its culture to leverage P-O fit [9]. Research also suggests that programs cannot go wrong by sharing too much information about the program on their website and through social media. Studies have shown that providing more information (not just length, but specificity) results in (1) a position being viewed as more attractive; [10] (2) the message being perceived as more credible; [11] (3) a greater probability of individuals applying for the job; [12] and (4) a higher probability of a job offer being accepted by an applicant [13].

Programs seeking to attract a more diverse applicant pool should ensure that the information provided on their websites and on social media pages demonstrate pictorial diversity, as including pictures of minorities has been shown to increase organizational attraction among Latinos and Blacks [14, 15]. Programs should note, however that pictures have a greater influence on minorities if some of the minorities in the photographs are in supervisory or leadership positions [16]. Including video testimonials from incumbent trainees who reflect the diversity the program is trying to attract can be a beneficial strategy as well, as incumbent testimonials can increase the amount of time an applicant spends on an organizational website, perceptions of information credibility, and employer attractiveness [17]. As underrepresented minority applicants to surgery programs often report unique preferences for training compared to white male applicants, programs seeking to attract more demographically diverse applicants may be wise to emphasize program characteristics rated as more desirable, such as social support, flexibility, innovation, and less traditional [18]. Programs seeking to expand their geographical reach should also include information about the program's location on their website and social media outlets, as location can have a major impact on decisions to join an organization [19]. Finally, programs seeking to increase diversity within their programs – but with little baseline diversity – should be honest about their current diversity climate with prospective applicants. Being transparent about current diversity figures, along with goals for future growth and specific strategies taken to enhance the diversity climate, can be a successful strategy as well. It is much better for an organization to provide an accurate snapshot of the current milieu so that informed decisions can be made, as inflated and inaccurate expectations among new entrants can result in job dissatisfaction and turnover [20].

## Targeted Recruitment

Programs seeking to increase the demographic diversity of applicants can also engage in targeted recruitment by focused advertisement and promotion at medical schools who graduate large number of underrepresented minorities. For example, programs seeking to increase their percentages of women applicants may be wise to promote their program and/or develop partnerships with the medical schools at University of California – Davis, University of Maryland, City University of New York (CUNY), all of which have at least 60% women in their graduating classes [21]. Similarly, programs seeking to increase the percentage of non-white and non-Asian applicants (both of which typically considered non-minority in medicine) could promote their programs and develop focused programming at

medical schools associated with historically black under-represented colleges and universities (HCBUs), such as Howard, Morehouse, and Meharry. These three medical schools consistently graduate cohorts with a strong representation of underrepresented groups, with the latest 2019 data showing that 81%, 79%, and 90% of their students, respectively, are non-White/non-Asian. The four U.S.-based Puerto Rican medical schools (Caribe, Ponce, Puerto Rico, San Juan Bautista) also have significantly high percentages (93–100%) of underrepresented students from which to recruit [21]. Creating virtual visit days, providing faculty lectures to clerkship students, and other educational outreach programs with these institutions can broaden awareness of the many unique residency programs that exist across the country.

## Selection

Programs must continue to ensure equitable opportunities for all applicants even after receiving applications from a diverse student group. Shortlisting applicants based on certain pieces of information in the application can be at odds with efforts to create a diverse surgical workforce. For example, reliance on standardized examination scores, such as United States Medical Licensing Examinations, has shown to negatively impact underrepresented minority applicants [22, 23]. For these and other reasons, the test developers have cautioned against using USMLE scores for residency selection purposes [24] and have recently moved to reporting scores only as pass/fail [25]. Letters of recommendation are also often frequently relied upon in selection, despite their discriminatory origin [26] and evidence showing differences across genders [27, 28]. Finally, use of unstructured interviews can also increase susceptibility to biases against minority groups [29]. Thus, programs must only incorporate screening tools and processes that will not disadvantage applicants from different backgrounds. Reliance on tools shown to predict performance in their own program and reviewed for their potential adverse impact is a necessary step to both ensure equitable opportunities and avoid potential litigation.

Other selection methods can help programs achieve their diversity goals. Inclusion of structured interviews can ensure interviewers avoid common interviewing mistakes and providing unbiased ratings [30]. Often, small details can have a large impact on hiring decisions. For example, applicants with accents and ethnic names are often disadvantaged during interviews, receiving less favorable interview ratings [31]. Similarly, overweight candidates receive significantly lower performance ratings in interviews, compared to average weight candidates [32]. Research in residency selection has demonstrated that the majority of women candidates receive inappropriate

questions related to marital status, and that these rates are highest in surgical subspecialties [33]. Finally, studies have shown an overall bias against pregnant women in interview settings [34]. Fortunately, these studies have also shown that structured interviews reduce these biases. Thus, standardizing which questions are asked (see Table 1 for examples) and training interviewers to avoid inappropriate and potentially illegal questions is critical.

Surgery programs who have implemented these strategies have seen diversity benefits. For example, a multi-institutional national study found that general surgery residency programs can increase the diversity of the candidate pool recommended for interview by de-emphasizing reliance on USMLE scores and instead relying upon standardized tools created for the purposes of selection [35••]. Fellowship programs similarly have successfully increased the diversity of candidates who continue on to the interview stage and are ultimately selected by implementing some of these aforementioned selection strategies [36].

## Ongoing Support

Programs should appreciate that the work is not over once a diverse group of candidates are selected into their training programs. Programs need to continue to review their data and processes to ensure all trainees continue to receive equitable treatment and opportunities. At a minimum, programs must systematically review and monitor sponsorship, mentoring, and performance appraisal processes to ensure equitable treatment and promotion of all trainees. Annual climate and culture surveys can also be a beneficial method to uncover trends and perceptions of organizational support and inclusion. For example, a recent survey of lesbian, gay, bisexual, transgender, and questioning (LGBTQ) surgery residents has shown that LGBTQ trainees are more likely to experience mistreatment (most often by attendings), are more likely to consider leaving training, and more likely to consider suicide [37]. Similarly, underrepresented racial groups and women often report experiencing subtle forms of discrimination throughout training [38, 39]. Thus, departmental leaders must continually assess the extent to which their organizational policies and practices are considered fair and supportive to ensure a positive work culture inclusive of all trainees. Creation of frequent and informal opportunities to interact with leadership will be valuable as well, as positive interactions with organizational leaders can not only help create a sense of belonging, connectedness, and person environment fit [40] but can also increase opportunities for dialog and reporting adverse events to leadership.

Continued education of all faculty and trainees is essential to ensure everyone is aware of the presence and impact of microaggressions, biases, and allyship.

**Table 1** Examples of structured interview questions

| Competency | Examples |
| --- | --- |
| Adaptable | As you know, situations can change quickly in a hospital. Tell me about a time when that happened to you. How did you adapt? |
| | You were meant to scrub in on a rare case, but when you arrive at the hospital, you are told that you are needed in another department. You have really been looking forward to this case, so what would you do? |
| Dependability | As a resident, you will have many people depending on you to complete different tasks. Tell me about a time when you demonstrated that you can be counted on |
| | You've agreed to cover for another resident who is away at a conference for a week. You had forgotten, though that you had promised to write up the results of a research project for your advisor by the end of that week, and obligations at home have prevented you from working on it. What would you do? |
| Leadership | Healthcare is a team sport, so not only must you be a team player, but you have to be a good leader as well. Tell me about a time when you had to lead a team facing an obstacle. What happened, and what did you do? |
| | As a senior resident, you notice that one of the junior residents on the service seems overwhelmed and struggles to complete all of the work on time. What do you do? |
| Problem solving | Tell me about a time when you were trying to complete a task but encountered a problem that set you back |
| | You have been collecting data for a research project and have finally gotten to the data analysis stage. However, the fridge containing your samples breaks during the night and none of your samples are useable by the next morning. What do you do? |

Incorporation of department-wide book clubs, journal clubs, conference activities, and diversity-themed rotations can help ensure ongoing education for all departmental members. Leaders must ensure that there is a culture for open dialog and comfort discussing race- and gender-related topics, as protective hesitation can limit mentoring discussions and adversely impact the career development of minority mentees [41, 42]. Mentorship is critical for

**Table 2** Summary of strategies for increasing diversity

| Strategy | Examples |
| --- | --- |
| **Recruitment** | |
| Information sharing | Increase pictorial diversity on program website |
| | Emphasize program characteristics that are desirable to women and URMs (e.g., innovation, flexibility) |
| | Inform applicants of current diversity statistics and steps taken to enhance program diversity climate |
| Targeted recruitment | Develop partnerships with HCBUs and other schools who graduate high percentages of underrepresented groups |
| **Selection** | |
| Provide equal opportunity to all applicants | Do not rely on selections methods known to disadvantage applicants from different backgrounds (e.g., USMLE scores, letters of recommendation) |
| | Include standardized tools shown to predict performance and minimize adverse impact in the selection process |
| Standardize interview proceedings | Utilize structured interview questions while interviewing applicants |
| | Train interviewers on how to conduct structured interviews and avoid inappropriate questions |
| **Ongoing support** | |
| Review program processes | Conduct annual climate and culture surveys to examine perceptions of organizational support and inclusion |
| | Create frequent, informal opportunities for trainees to interact with leadership and report adverse events |
| Continue diversity training | Incentivize participation in diversity initiatives |
| | Give protected time to participation in diversity initiatives |
| | Involve all members of the program in diversity discussions, not just URMs |
| Encourage the professional development of URM trainees | Encourage involvement in national minority societies |

both professional and personal development of underrepresented trainees and, thus, requires intentional consideration and focus [43•]. Ensuring that all organizational members are involved in these discussions, not just those who represent underrepresented groups, can help create a more uniform culture for diversity and help avoid the minority tax – the burden of extra responsibilities placed on minorities in the name of diversity [44]. Observing underrepresented faculty and residents struggle with the minority tax could worsen work-life balance perceptions among URM students or residents. As research has shown that even medical students experience problems associated with the minority tax, [45] it is likely that these effects can become even more pronounced as trainees progress through residency and can impact burnout and retention. If a program does require significant leadership or involvement from faculty or trainees from underrepresented groups, protected time and incentives should be provided to participate in such endeavors.

Finally, programs can support the development and retention of diverse trainees by encouraging involvement in national minority societies, such as the Association of Women Surgeons, Association of Out Surgeons and Allies, Latino Surgical Society, National Hispanic Medical Association, Society of Black Academic Surgeons, and Society of Asian Academic Surgeons. Involvement in national minority societies can help underrepresented trainees navigate organizational dilemmas and barriers by addressing common problems encountered by diverse trainees and providing a venue for discussion of successful solutions and strategies. These societies can provide financial support, training opportunities, and mentoring for underrepresented organizational members, which can strengthen their sense of belonging and intention to continue in their chosen career [46•].

## Conclusion

Programs seeking to enhance the diversity of their residency programs must consider their practices and policies from a recruitment, selection, and ongoing support standpoint (see Table 2 for a summary). Unfortunately, there are no "quick fixes." Creating a thriving culture for diversity, equity, and inclusion requires intentional focus and allotment of time and resources.

### Declarations

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