

AAIM Perspectives

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Promoting Equity in Letters of Recommendation: Recognizing and Overcoming Bias



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The recent transition of the United States Medical Licensing Examination Step 1 to pass–fail grading provides an opportunity for more holistic review of candidate applications and more equitable selection processes. While it is generally positive, the change may lead selection committees to more heavily weigh more subjective tools such as letters of recommendation (LORs) in candidate evaluation. The language in LORs may reveal the writer's unconscious biases as well as provoke a reader's unconscious biases.¹ By minimizing opportunities for unconscious bias, we can use language as an actionable lever to move the needle toward achieving more equitable processes along the recruitment pathway.

LORs are uniquely positioned to give deep insight into how a candidate's skills and accomplishments manifest at the bedside. LORs can validate material shared elsewhere in an application and provide new information. Letter writers often know candidates better than division chairs or program directors, who may not have worked with the candidates clinically.

However, LORs are ripe with potential for bias. Many LORs are not written in a standardized format, allowing for inconsistency in length, content, and vocabulary. There is little literature addressing best practices for writing narrative LORs, and even less guidance on avoiding bias in LORs.^{2,3} On the reviewing side, when faced with numerous applications and high cognitive load, reviewers may feel pressure to scan LORs quickly and thus rely on their automatic, schema-based processing,³ which can make their judgements more susceptible to implicit bias.⁴

As a medical education community, it is unclear what should happen with LORs. Should we eliminate LORs because they are prone to bias? Are they salvageable? At this critical juncture in medical education selection processes, we must pause to examine LORs through a disparities lens. With this lens in mind, this article reviews the current literature, focusing on biases in LORs, prior to making recommendations for recognizing and reducing bias in LORs at individual and institutional levels.

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THE CURRENT LANDSCAPE

Biases in LORs disproportionately affect women and individuals from groups that are historically underrepresented in medicine (URiM).^{5–14} LORs for men are frequently longer than LORs for women and are more likely to include specific examples about publications, leadership roles, and awards earned.^{5,6} The longer the

letter and the more details provided, the better the candidate is likely to be perceived to be by the reader.¹⁵⁻¹⁷

Letter writers often deploy different adjectives to describe men and white candidates compared with women and URiM candidates.⁴⁻¹¹ Men and white candidates are more likely to be described with standout adjectives (“exceptional”) and adjectives demonstrating agency

(“accomplished”).^{5,6,8,9} In contrast, women and URiM candidates are more likely to be described with communal adjectives that focus on the welfare of others (“nurturing,” “kind”) and grindstone adjectives that emphasize effort (“hardworking”).⁵⁻⁹ Having strong interpersonal skills is certainly important to physician work, but research has shown that communal terms in LORs negatively affect hiring in academia, even after controlling for productivity and performance measures.⁷

LORs for woman and URiM candidates contain more doubt-raising language compared with LORs for men and white candidates.^{5,9,11} For example, LORs for women are 2.5 times more likely to make a minimal assurance (“She can do this job”) rather than a ringing endorsement (“She is the best candidate for this job) compared with LORs for men.⁵ Additionally, LORs for women contain more negative language (“Although she is not a researcher. . .”), more hedges (“it appears. . .”), and more faint praise (“She is better than average”).⁵ In a 2021 study analyzing LORs to an institution’s cardiology fellowship, hedges and faint praise were only found in LORs for women and URiM candidates.⁹

While existing literature on these topics focuses on inequities by gender and URiM status, no data are available on LORs for individuals with other identities or experiences underrepresented in medical education (eg, first-generation college student, disability). Additionally, there are other minority groups in medicine that do not fall under the definition of URiM, such as candidates self-identified as Asian or mixed ethnicity. These minority groups may experience bias in their LORs, though it has not been studied extensively in medicine.¹⁸ We encourage readers to consider our recommendations using a diversity lens broadly and inclusively defined.

A Word on Standardized Letters of Evaluation

In recent decades, several specialties have adopted standardized letters of evaluation (SLOEs) rather than the traditional narrative LORs.¹⁹⁻²¹ SLOEs contain quantitative sections, wherein applicants are given percentile scoring in various attributes, and qualitative sections with short-answer questions to describe applicants.²²

When emergency medicine introduced standardized letters in 1995, they found that standardization increased inter-rater reliability and decreased time required to review LORs.¹⁹ Since then, SLOEs have been adopted by other specialties, including plastic surgery, orthopedic surgery, dermatology, otolaryngology, and obstetrics and gynecology. More recently, there has been a call to action to adopt SLOEs across all specialties.²³ The authors support the idea that all specialties should consider letter standardization, but we urge educational leaders to remember 2 key points. First, SLOEs still consistently demonstrate gender and racial bias.^{21,22,24-26} While standardization may mitigate some biases, standardization alone will not eliminate bias in LORs. Secondly, some specialties who utilize SLOEs also require applicants to obtain the traditional narrative LORs. It is essential for individuals and institutions to actively promote equity in all types of letters of recommendation.

PERSPECTIVES VIEWPOINTS

- Letters of recommendation (LORs) are systematically biased against women and those historically underrepresented in medicine.
- Recognizing and overcoming bias in LORs is a feasible, high-yield way to achieve more equitable selection processes.
- We recommend that writers adopt a structured format, include detailed examples of performance, and proofread for biased adjectives and doubt-raisers.
- We recommend that selection committees complete implicit bias training, learn about LOR biases, and elaborate on admissions decisions.

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WHAT LETTER WRITERS CAN DO

Prior to Writing the Letter

The first step to reducing bias in LORs comes at the level of the individual letter writer. Prior to agreeing to write an LOR, all potential writers should pause and ask themselves, “Can I write a strong LOR for this candidate?” If not, they should consider saying no. In our experience, a weak LOR can be more harmful to an applicant’s candidacy than no letter at all. Next, writers should jot down the strength of their recommendation. Later, when proofreading their LOR, writers can go back and make sure that the language used matches their intended strength of recommendation. Letter writers should eliminate any doubt-raising language in candidates whom they intend to unreservedly recommend.

Once a person has decided to write an LOR, they should meet with the candidate to discuss the letter. At a minimum, they should review the candidate’s curriculum vitae (CV) and personal statement and ask the

candidate to share a few memorable encounters they had together. Having the CV, personal statement, and examples at the ready accomplishes 2 things. First, it helps writers develop a more detailed LOR for all candidates. Second, it reduces sole reliance on the writer's overall judgement, decreasing the role of implicit bias. Bauer and Baltes demonstrated that performing a structured free recall prior to completing performance evaluations eliminated the effects of gender and racial bias.^{27,28} In a similar way, having concrete examples of patient encounters, memorable experiences, and CV highlights at the ready will allow letter writers to focus on concrete details, rather than leaving room for open-ended judgements, which are prone to more implicit bias.

Writing the Letter

Although standardizing LORs does not eliminate all bias, writing narrative LORs in a structured format (Figure 1) can improve writer and reviewer efficiency, increase inter-reviewer reliability, and serve as more reliable predictors of performance.^{19,29} Letter writers should start with an introduction, explaining their relationship with the candidate, including how long and in what context they worked together. In the body of the letter, writers must be specific and enthusiastic in their support, using the details they pulled during the pre-writing phase. They should describe the learner's unique characteristics and give specific examples of their performance. Commenting specifically on patient care and procedural skills, medical knowledge, and communication skills has been shown to distinguish high from low performers.³⁰ The concluding paragraph

should summarize the strength of recommendation, which was determined prior to writing the letter.

One question that comes up frequently is whether it is acceptable to mention personal life in an LOR. For example, some LORs contain personal details not directly related to work, such as an applicant becoming a parent or overcoming an illness during training. LORs for women are 7 times more likely to contain such details about personal life than LORs for men,³¹ suggesting that this practice is biased by gender. While discussing personal life might seem like a well-intentioned way to demonstrate maturity or resilience, we believe that personal information is rarely appropriate for the LOR. If a letter writer thinks mentioning personal life will contribute strongly to an LOR, always ask the candidate first.

After Writing the Letter

After drafting an LOR, writers must proofread with an eye for recognizing their own biases. They should check their adjectives, making sure to balance communal adjectives ("caring") with adjectives that connote excellence ("superb"), where appropriate. Online gender bias calculators can be helpful in this analysis.³² Writers should ensure they mentioned specific accomplishments and concrete examples, adding detail where possible. Finally, they should determine if the strength of the drafted letter matches their intention, removing any words or phrases that unintentionally raise doubt. A checklist (Figure 2) can be useful for effective and efficient proofreading.

For faculty who write LORs regularly, all LORs should be saved in one place. Once faculty have multiple letters written, they should perform a quick self-

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| <p>Introduction Paragraph</p> <ul style="list-style-type: none"> • Letter writer's name, rank, job description • Letter writer's relationship with the candidate • How long and in what context letter writer worked with candidate <p>Body (Approximately 3 paragraphs)</p> <ul style="list-style-type: none"> • Be enthusiastic and specific in support • Give concrete examples of candidate's performance • Discuss core competencies, such as patient care, medical knowledge, and communication skills <p>Conclusion</p> <ul style="list-style-type: none"> • Summarize strength of recommendation • Consider providing contact information |
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Figure 1 Basic structure for a narrative letter of recommendation.

Before Writing an LOR

- Decide if you are the best person to write the LOR before committing.
- Review applicant's CV and personal statement to select experiences and accomplishments to highlight.
- Talk to the applicant about a few memorable shared experiences or patient encounters.
- Determine and jot down the strength of your recommendation.

While Writing an LOR

- Use a structured format, including an introductory paragraph explaining your role and relationship with the applicant and a concluding statement summarizing the strength of your recommendation.
- Be specific, including concrete and detailed examples.
- Generally, do not mention personal life unless explicitly discussed with the applicant.

After Writing an LOR

- Examine your adjectives. Do your adjectives describe the applicant based on knowledge and skills rather than personality? Consider using an online gender equity calculator.
- Review your examples. Did you emphasize specific accomplishments, not just effort? Make sure to mention research publications, awards, and leadership roles. Go back and add details if needed.
- Ensure the strength of the LOR matches your original intention. Look out for superlatives and unintentional doubt raisers.
- Save the LOR in an LOR folder to review and refer to later.

After Writing Several LORs

- Check LOR length. Are you consistent with letter length or do you write more for certain groups of applicants?
- Review consistency with use of applicant name and formal title.
- Swap a few LORs with a colleague and give each other feedback.

Figure 2 Practical tips to promote equity in writing letters of recommendation (LORs) for medical learners.

check to see if they are consistent with length, amount of detail, and descriptors for all groups of candidates. Institutions keep a central repository of LORs written by individual faculty to periodically review with a disparities lens. Institutional support is essential to promoting equity in LORs.

WHAT INSTITUTIONS CAN DO

Supporting Letter Writers

Institutional leaders should build a standardized format for narrative LORs within their departments (Figure 1) and encourage faculty to use this format. Institutional leaders should also conduct faculty development around LORs in multiple venues, such as lunch-and-learn workshops and brief updates at division meetings. Faculty development on LORs must include tools on recognizing and reducing bias. Leaders in diversity, equity, and inclusion roles can partner to support these processes. Tools should be practical and ready for implementation, such as checklists and sample LORs. For example, the internal medicine undergraduate

medical education leaders at our institution send an LOR e-mail to all internal medicine faculty every summer, just prior to peak letter-writing season for the students. This e-mail includes the preferred format for the institution, sample LORs, and tips to reduce bias in letter writing.

Institutional leaders should also advocate for high-level LOR analysis at the department level. These analyses can provide feedback to letter writers and drive further faculty development.

Supporting Letter Reviewers

Institutions must support the people reviewing LORs as a part of the selection process. First, reviewers must learn about the systematic biases in LORs. Reviewers must understand that there are differences in letter length, adjectives used, and strength of praise for women and URiM candidates, so that they can take these biases into account when reviewing LORs. Selection committees should discuss how they want to approach these biases, developing a shared mental model for LOR review.

Reviewers must be aware of their own implicit biases, but awareness is only the first step. To reduce the impact of implicit bias in LOR review, reviewers must slow down and elaborate on their judgements. Morgan et al³³ conducted a groundbreaking study on the role of elaboration in LOR review. They divided participants into groups and asked them to evaluate fictitious candidates for a graduate psychology program based on 4 LORs. The first group of reviewers simply gave their admission decision without elaboration. Not surprisingly, this group's admission decisions demonstrated gender and racial bias. The second group of reviewers had to elaborate on their admission decisions by rating the candidates on 4 performance areas and briefly explaining why they chose those ratings. When the participants were forced to slow down and elaborate on their admission decisions, the impact of gender and racial bias went away. The authors proposed that the no-elaboration group used automatic processing and were more dependent on schemas shaped by implicit bias as they quickly skimmed the LORs. The second group, however, used controlled processing, evaluating candidates in a more deliberate manner, which reduced the effects of race and gender bias on their evaluations.³³

To translate this approach for the medical education world, programs could create scoring systems for LORs based on program values or desirable qualities, such as clinical excellence, humanism, and curiosity. If reviewers had to score LORs based on specific criteria, perhaps their reviews would be less affected by their implicit biases. Programs could also ask reviewers to justify their scores, either written in free text or verbally, when presenting candidates.

Elaboration is essential to reducing bias in LOR review, but it does take time. We recommend that selection committees discuss how and when it might be feasible to incorporate brief elaboration in their admission decisions. Programs may need to reevaluate the exact role of LORs as a part of holistic review.^{34,35}

CONCLUSION

The medical education community must strive to provide equitable assessments and opportunities for all learners. It is incredibly challenging because every selection tool at our disposal is affected by bias. The hard truth is that if we removed every assessment and selection tool that contained bias, we would have nothing left. As educators, we are left with the challenging work of addressing individual and institutional biases. As we move toward more holistic review of candidates across the medical education continuum, we must be deliberate about how we write, review, and instruct on LORs. Fortunately, there are some evidence-based strategies to reduce bias in LORs, including free recall for writers^{27,28} and elaboration for reviewers.³² At this

critical juncture in revisiting selection in medical education, we must provide support not just to individual faculty, but also to programs and institutions. We challenge all leaders in medical education to promote equity for all learners by revisiting how we write, read, and utilize letters of recommendation.

References

1. Greenwald AG, Banaji MR. Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychol Rev* 1995;102(1):4–27.
2. Association of American Medical Colleges (AAMC). Guidelines for writing a letter of evaluation for a medical school applicant. Available at: <https://www.aamc.org/system/files?file=2019-09/lettersguidelinesbrochure.pdf>. Accessed September 10, 2023.
3. University of California San Francisco (UCSF) School of Medicine. Avoiding bias in letters of recommendation. Available at: <https://meded.ucsf.edu/md-program/current-students/student-services/residency-application-matching-resources/avoiding-bias-letters-recommendation>. Accessed March 17, 2023.
4. Singletary SL, Hebl MR. Compensatory strategies for reducing interpersonal discrimination: the effectiveness of acknowledgments, increased positivity, and individuating information. *J Appl Psychol* 2009;94(3):797–805.
5. Trix F, Psenka C. Exploring the color of glass: letters of recommendation for female and male medical faculty. *Discourse Soc* 2003;14(2):191–220.
6. Turrentine FE, Dreisbach CN, St Ivany AR, Hanks JB, Schroen AT. Influence of gender on surgical residency applicants' recommendation letters. *J Am Coll Surg* 2019;228(4):356–365.e3.
7. Madera JM, Hebl MR, Martin RC. Gender and letters of recommendation for academia: agentic and communal differences. *J Appl Psychol* 2009;94(6):1591–9.
8. Hoffman A, Grant W, McCormick M, Jezewski E, Matemavi P, Langnas A. Gendered differences in letters of recommendation for transplant surgery fellowship applicants. *J Surg Educ* 2019;76(2):427–32.
9. Zhang N, Blissett S, Anderson D, O'Sullivan P, Qasim A. Race and gender bias in internal medicine program director letters of recommendation. *J Grad Med Educ* 2021;13(3):335–44.
10. Grimm LJ, Redmond RA, Campbell JC, Rosette AS. Gender and racial bias in radiology residency letters of recommendation. *J Am Coll Radiol* 2020;17(1 Pt A):64–71.
11. Brown O, Mou T, Lim SI, et al. Do gender and racial differences exist in letters of recommendation for obstetrics and gynecology residency applicants? *Am J Obstet Gynecol* 2021;225(5):554.e1–554.e11.
12. Khan S, Kirubakaran A, Shamsheer T, Clayton A, Mehta G. Gender bias in reference letters for residency and academic medicine: a systematic review. *Postgrad Med J* 2023;99(1170):272–8.
13. Bradford PS, Akyeampong D, Fleming MA 2nd, Dacus AR, Chhabra AB, DeGeorge BR Jr. Racial and gender discrimination in hand surgery letters of recommendation. *J Hand Surg Am* 2021;46(11):998–1005.e2.
14. Grova MM, Jenkins FG, Filippou P, et al. Gender bias in surgical oncology fellowship recommendation letters: gaining progress. *J Surg Educ* 2021;78(3):866–74.
15. Kleinke C. Perceived approbation in short, medium, and long letters of recommendation. *Percept Mot Skills* 1978;46(1):119–22.
16. Ralston SM, Thamel CA. Effect of vividness of language on information value of reference letters and job applicants' recommendations. *Psychol Rep* 1988;62(3):867–70.
17. Judge TA, Higgins CA. Affective disposition and the letter of reference. *Organ Behav Hum Decis Process* 1998;75(3):207–21.

18. Hartocollis A. Harvard rated Asian-American applicants lower on personality traits, suit says. *The New York Times* 2018; . June 16 Available at: <https://www.nytimes.com/2018/06/15/us/harvard-asian-enrollment-applicants.html?text=Harvard%20consistently%20rated%20Asian%2DAmerican,in%20a%20lawsuit%20against%20the>. [Accessed March 15, 2023].
19. Love JN, Smith J, Weizberg M, et al. Council of Emergency Medicine Residency Directors' standardized letter of recommendation: the program director's perspective. *Acad Emerg Med* 2014;21(6):680–7.
20. Kimple AJ, McClurg SW, Del Signore AG, Tomoum MO, Lin FC, Senior BA. Standardized letters of recommendation and successful match into otolaryngology. *Laryngoscope* 2016;126(5):1071–6.
21. Reghunathan M, Carbullido MK, Blum J, Wong S, Gosman AA. Standardized letters of recommendation in plastic surgery: the impact of gender and race. *Plast Reconstr Surg* 2022;149(5):1022e–31e.
22. Alvarez A, Mannix A, Davenport D, et al. Ethnic and racial differences in ratings in the medical student standardized letters of evaluation (SLOE). *J Grad Med Educ* 2022;14(5):549–53. <https://doi.org/10.4300/JGME-D-21-01174.1>.
23. Tavarez MM, Baghdassarian A, Bailey J, et al. A call to action for standardizing letters of recommendation. *J Grad Med Educ* 2022;14(6):642–6.
24. Li S, Fant AL, McCarthy DM, Miller D, Craig J, Kontrick A. Gender differences in language of standardized letter of evaluation narratives for emergency medicine residency applicants. *AEM Educ Train* 2017;1(4):334–9.
25. Grall KH, Hiller KM, Stoneking LR. Analysis of the evaluative components on the standardized letter of recommendation (SLOR) in emergency medicine. *West J Emerg Med* 2014;15(4):419–23.
26. Friedman R, Fang CH, Hasbun J, et al. Use of standardized letters of recommendation for otolaryngology head and neck surgery residency and the impact of gender. *Laryngoscope* 2017;127(12):2738–45.
27. Baltes B, Bauer C, Frensch P. Does a structured free recall intervention reduce the effect of stereotypes on performance ratings and by what cognitive mechanism? *J Appl Psychol* 2007;92(x):151–64.
28. Bauer CC, Baltes BB. Reducing the effect of gender stereotypes on performance evaluations. *Sex Roles* 2002;47:465–76.
29. Prager JD, Perkins JN, McFann K, Myer CM 3rd, Pensak ML, Chan KH. Standardized letter of recommendation for pediatric fellowship selection. *Laryngoscope* 2012;122(2):415–24.
30. Stohl HE, Hueppchen NA, Bienstock JL. The utility of letters of recommendation in predicting resident success: Can the ACGME competencies help? *J Grad Med Edu* 2011;3(3):387–90.
31. University of Arizona Commission on the Status of Women. Avoiding gender bias in reference writing. Available at: https://csw.arizona.edu/sites/default/files/avoiding_gender_bias_in_letter_of_reference_writing.pdf. Accessed March 17, 2023.
32. Forth T. Gender bias calculator. Available at: <https://www.tom-forth.co.uk/genderbias/>. Accessed December 13, 2022.
33. Morgan WB, Elder KB, King EB. The emergence and reduction of bias in letters of recommendation. *J Appl Soc Psychol* 2013;43(11):2297–306.
34. Association of American Medical Colleges (AAMC). Holistic review. Available at: <https://wssww.aamc.org/services/member-capacity-building/holistic-review>. Accessed March 10, 2023.
35. Gallegos M, Landry A, Alvarez A, et al. Holistic review, mitigating bias, and other strategies in residency recruitment for diversity, equity, and inclusion: an evidence-based guide to best practices from the Council of Residency Directors in Emergency Medicine. *West J Emerg Med* 2022;23(3):345–52.