

AAIM Perspectives

Aiming for Equity in Clerkship Grading: Recommendations for Reducing the Effects of Structural and Individual Bias



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INTRODUCTION

In recent years, we have witnessed how the content and structure of clerkship education changes in response to societal and patient needs.^{1,2} Examples of such adaptations include pedagogical redesign,³ early immersion in patient care,⁴ competency-based medical education,^{5,6} and longitudinal integrated clerkships.^{7,8} More recently, many learners and educators have turned their attention to structural racism in medicine^{9,10} and the parallels between disparities in health care and disparities in access to education and opportunity within medicine. Educational equity is now recognized as a core principle of undergraduate medical education.¹¹⁻¹³ Many learners from racial and ethnic groups underrepresented (URG) in medicine face inequities in the clerkship learning environment that lead to social isolation, job dissatisfaction,¹⁴⁻¹⁶ and eventual attrition of URG learners and faculty. These negative outcomes are particularly concerning because diversity among learners, health care workforce, and

teams is important for health equity,¹⁷⁻¹⁹ enhances the learning environment, promotes culturally responsive care, improves access to care for underserved communities, and can improve health outcomes.²⁰⁻²³

A thorough analysis of disparities in medical school is critical to creating a learning environment that is equitable, particularly in the clerkship year when assessment of student performance can have long-term ramifications on a career trajectory.²⁴⁻²⁶ URG learners face multiple pressures and inequities that affect their lived experiences and assessments in the clerkship setting,^{14,27-29} including heightened scrutiny from physicians and patients, stereotype threat when facing faculty and resident assessors,¹⁴ “covering” (concealing or reducing the prominence of a trait),³⁰ differential expectations in the classroom,³¹ and imposter syndrome.¹⁴ Although many of these phenomena occur in interpersonal relationships, structural barriers are also woven into clerkship assessment, evaluation, and grading. Clerkship students are observed, assessed, evaluated and, at many institutions, graded. They receive formative feedback meant to foster their growth and summative evaluations to determine their performance based on clerkship objectives and rubrics. Grades or narrative summaries serve to communicate their level of achievement or competence to internal and external stakeholders. In most Liaison Committee

Funding: None.

Conflicts of Interest: None.

Authorship: All authors had a role in writing this manuscript.

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on Medical Education (LCME)-accredited medical schools, individual clinical performance evaluations, standardized tests, and standardized patient examinations remain the foundation of student clerkship assessment,³² yet there is evidence of inequity in these assessments and the grading process.^{26,33,34}

In this perspective, we summarize evidence-based recommendations to address inequities focusing on the clerkship grading process. We aim to guide clerkship directors through an exploration and potential redesign of current assessment and grading systems using an equity lens. Although we focus on strategies that internal medicine clerkship leaders can use, we believe these strategies can be applied to other specialty clerkships seeking to create a more equitable grading process.

APPLICATION OF THE SOCIAL-ECOLOGICAL MODEL

We organize our recommendations using the social-ecological model (SEM),³⁵ a theory-based framework that describes the complex interplay among the individual, interpersonal, institutional, and societal factors that influence behavior and effect change (Figure). Commonly used in the public health sphere,^{35,36} SEM informs policy, outreach, and prevention strategies. This model is increasingly being used to identify gaps and improve medical education, such as identifying possible factors contributing to inequities in assessment²⁶ and maximizing growth in the learning environment.³⁷ We propose the model as an organizing framework for recommendations to promote an equitable grading process in clerkships (Table^{25,27,31,38-43}).

Individual/Intrapersonal

As we review student assessment in the individual/intrapersonal domain, consider how individuals—students, assessors (supervising faculty and residents), and clerkship leaders responsible for generating summative information—affect each other and how interpersonal relationships can effect change. Individual/intrapersonal factors that influence assessment include personal attitudes, biases, and experience with bias.

Strategies to modify individual/interpersonal factors include enhancing confidence, developing skills, expanding knowledge, modifying attitudes, and promoting assessment methods that minimize bias. Individual strategies can be directed toward both supervisors and students.

PERSPECTIVES VIEWPOINTS

- Robust evidence demonstrates inequities in clerkship grades that may be related to individual and structural bias, such as those seen in faculty evaluations and the clerkship grading process.
- Evidence for effective strategies to minimize bias in clerkship assessment is limited.
- Examples of recommendations include faculty/resident development, workplace-based assessments with criterion-based rubrics, competency-based non-normative grading, grading committees, limiting weight of standardized knowledge-based examination scores, eliminating standardized examination score cut-offs for Honors grades, increasing the number and types of assessments, and examining inequities in clerkship grading.

Faculty and resident supervisor development. Medical schools, including clerkships, should prioritize teaching faculty and residents the skills and strategies needed to mitigate bias when they assess students. Ongoing development of supervisors should occur in both the inpatient and outpatient settings. All faculty and resident supervisors should be required to participate in ongoing education (workshops or modules) through the department or school, around concepts that could include:

- The history and pervasiveness of bias in medicine, including examination of the current learning environment^{44,45}
- The effects of personal and structural bias on assessment of learners^{24-26,44}
- Best practices in observation and assessment of students in the workplace (workplace-based assessments)⁴⁶
- Best practices in mitigating the effects of sex and racial bias on assessment, including information on how to write specific, behaviorally based narrative assessments that include students' strengths and areas for improvement²⁴

Education on differences in language used based on sex and race is critical. This language should focus on descriptors for knowledge, skills, and attitudes, rather than personality descriptors (pleasant, quiet).³⁸ Sex-bias tool calculators for narratives are available on the internet.³⁹ A behaviorally based narrative such as “She was a treat to have on the medicine service” can be changed to “Her presentations were thorough, she was responsive to the patients, and her interactions with staff were professional.” A sample awareness of inequities in language example is “As is common in his culture, he was quiet and studious.” This statement can be changed to “During rounds, when prompted, his responses to direct questions about patient care reflected that he had done extensive reading about his patients.”

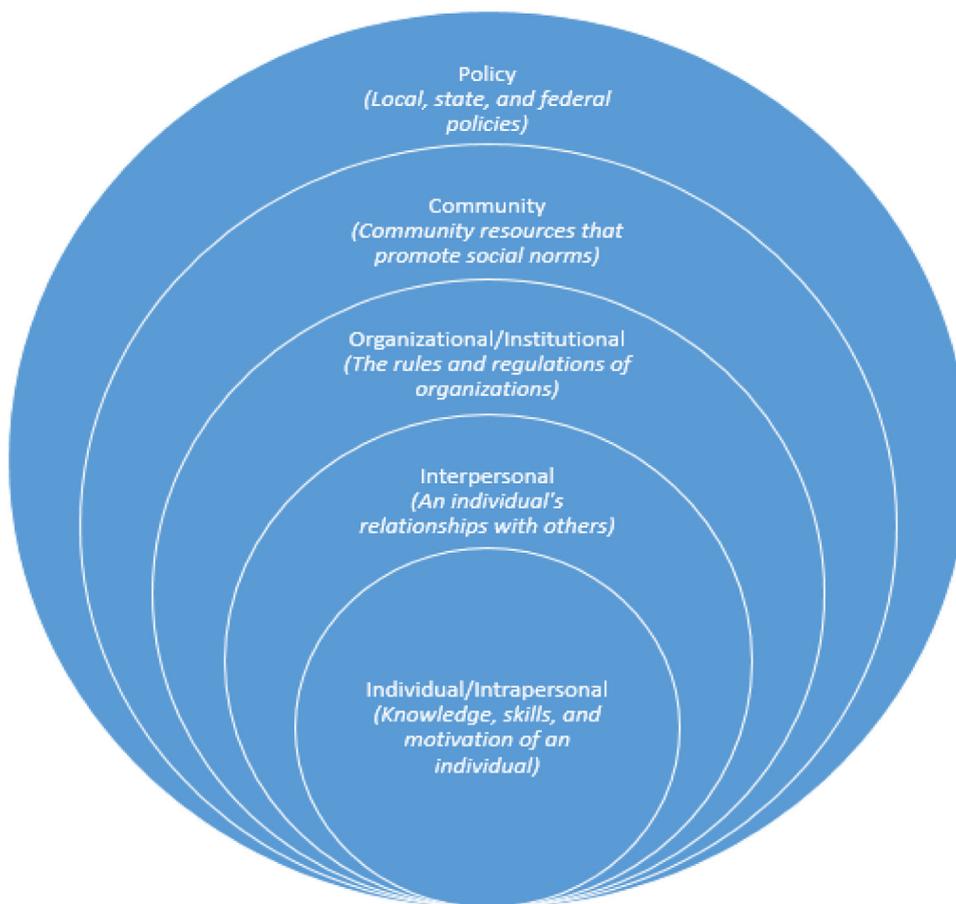


Figure The Social-Ecological Model (SEM), a framework that describes the complex interplay between individual, interpersonal, institutional, and societal factors that can influence behavior and effect change.

Many medical schools provide local online and in-person workshops addressing these topics, and free resources are widely available.^{47,48} Examples include the Alliance for Academic Internal Medicine (AAIM) website,⁴⁹ which provides links and guides for faculty development, assessment, and information on diversity, equity, and inclusion initiatives, as well as the online Implicit Association Test to help raise awareness of biases.⁴⁰

Assessment tools. Careful selection of assessment methods, ideally prioritizing those based on observations in the workplace, is critical, and must be paired with ongoing institutionally supported faculty and resident development on how to utilize these tools.

Clerkships should utilize criterion-referenced and competency-based assessment forms with defined rubrics that include specific behaviors reflective of a certain level of achievement for clinical performance measures. Well-defined anchors indicating a certain level of achievement can help reduce misinterpretation or subjectivity.⁵⁰ Examples of assessment rubrics are found in [Appendix A](#) and [Appendix B](#) (available online). Standardized

checklists can also be used in select situations, including during review of notes, directly observed patient encounters, objective structured clinical examinations (OSCE), or oral presentations. The Association of American Medical Colleges offers a guide for developers of core entrustable professional activities that can be used as a guide to create clerkship assessment rubrics.⁵¹

Clerkships should increase the number of clinical care-based observations of students.^{26,46} This increase might include workplace-based assessments, for example, observing a student communicating with a patient or with an interprofessional team member; reviews of students' patient care notes or oral presentations; and OSCEs. Increasing the total number of observations might mitigate potential bias from a single supervisor or assessment tool.

Clerkships should identify ways to decrease bias in assessment tools and processes and be consistent with the use of race/ethnicity for clinical reasoning cases or OSCEs.^{52,53} The inconsistent and inaccurate use of race for assessment cases can reinforce stereotypes and suggest that phenotypes, rather than the socioeconomic, structural, or biologic factors, are pertinent for

Table Using the Socioecological Model to Organize Clerkship-Level Recommendations to Promote an Equitable Grading Process

Socioecological Level	Recommendation	Action	Details/Resources
Individual/ Intrapersonal	Supervisor development	<p>Teach faculty and resident supervisors about best practices in writing narrative assessments. Require all faculty and resident supervisors to participate in ongoing bias education in the following:</p> <ul style="list-style-type: none"> • History and pervasiveness of bias • Effects of bias on assessment • Workplace-based assessments • Best practices in bias mitigation 	<p>Resource with descriptors by personal attribute vs competency:³⁸ https://link.springer.com/article/10.1007/s11606-019-04889-9/tables/4</p> <p>Gender bias calculator tool:³⁹ https://www.tomforth.co.uk/genderbias</p> <p>Resources on UIM learners' cognitive burdens in the learning environment:^{27,31} https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2703945</p> <p>https://journals.sagepub.com/doi/pdf/10.1177/0022146518821388</p> <p>Resource on identifying one's own implicit attitudes and beliefs:⁴⁰ https://implicit.harvard.edu/implicit/education.html</p>
	Assessment tools	Utilize criterion-referenced and competency-based assessment forms with defined rubrics that include specific behaviors	<p>Example of observed clinical encounter form rubric: Appendix A</p> <p>Example of note review rubric: Appendix B</p>
Interpersonal	Applying a pro-equity lens to assessment of competencies	<p>Avoid overemphasis on knowledge-based standardized examinations</p> <p>Observe and assess patient advocacy or structural competency skills, student initiative, team collaboration, and self-improvement with significant weighting as essential skills</p>	<p>Example of a Structural Competency domain: The student can identify social and structural determinants that impact their patients' health and actions that promote optimal health outcomes</p> <p>Example of Patient Advocacy Competency grading rubric: Appendix C</p>
Organizational/ institutional	Access to learning	Ensure that all learners have equitable access to learning resources and study materials	<p>Provide computer and stable WiFi access</p> <p>Resources for examination preparation, question banks</p>
	Grading process	<p>Implement criterion-referenced and competency-based grading rather than normative grading</p> <p>Use a grading committee to determine final level of achievement</p> <p>Provide guidance to clerkship leaders on how to generate a bias-free detailed narrative</p>	<p>Example of equity in assessment checklist:⁴² https://meded.ucsf.edu/sites/meded.ucsf.edu/files/2021-02/Equity_in_Assessment_Checklist_2020dec14.pdf</p> <p>Resource on clerkship grading committees:⁴¹ https://link.springer.com/content/pdf/10.1007/s11606-019-04879-x.pdf</p>

Table (Continued)

Socioecological Level	Recommendation	Action	Details/Resources
		summary Restrict weight of knowledge-based standardized examinations	Resource on writing high-quality narrative summaries: ⁴³ https://meded.ucsf.edu/sites/meded.ucsf.edu/files/inline-files/Good%20assesment%20practice%20%20evaluation%20examples.pdf
	Educational continuous quality improvement	Refrain from using a standardized test score cutoff to designate Honors achievement	
		Review clerkship data about equity in grades and mistreatment reports	Review clerkship variables during curriculum reviews, similar to site equivalency review, that relate to equity, such as
		Establish a committee to review data annually with a DEI lens towards curricular opportunities, learning climate, and assessment	<ul style="list-style-type: none"> • Sex and UIM status in distribution of clerkship grades and assessments • The number and type of mistreatment experiences reported by students and clerkship responses
		Ensure pro-equity training is implemented across disciplines	Resource for a continuous quality improvement process to address bias in clerkship grading: ²⁵ https://journals.lww.com/academicmedicine/Fulltext/2020/12001/Washington_University_School_of_Medicine_in_St._21.aspx
		Address policies, processes, and the environment to enhance a culture of respect and inclusion	

DEI = diversity, equity, inclusion.

certain pathologies. In addition, when race or ethnicity is used only when a patient is non-white, it implies that white is the norm. Failing to minimize bias in assessment tools can further marginalize URG students and add to cognitive overload, which may, in turn, impact performance.²⁶ Extend bias mitigating strategies to standardized patient assessors, such as intentional recruitment of standardized patients from diverse backgrounds, bias and pro-equity training, and implementation of rubrics.^{26,34}

Student education. Empowering students to understand their potential vulnerabilities in the clerkship learning environment and providing strategies that they can employ to overcome these and advocate for themselves is important. This type of education can be led by the school given the cross-clerkship nature of these skills. Online resources are also readily available.⁵⁴

Increase student awareness around cognitive bias such as stereotype threat, which is the concept when a student worries about confirming a negative stereotype of one’s racial or gender population to the point that

this thought negatively impacts their performance.^{26,55} Reinforce the growth mindset (embracing challenges as opportunities to learn and grow).^{37,46,56}

Interpersonal

When we consider the second domain of SEM, we examine interpersonal factors that can provide support or create barriers to equity. We define them as interactions and relationships between people such as educational alliances,⁵⁷ mentoring, social networks, and peer cohorts. We also consider the relationships that students build with their patients. Interpersonal strategies relate to increasing professional support, improving relationships, and the clinical learning environment.

Apply a pro-equity lens to assessment. Clerkships should avoid overemphasizing knowledge-based standardized examination scores to encourage students to focus on patient care learning, including developing the clinical knowledge and skills needed for optimal patient care delivery.^{46,58}

Clerkships should assess “patient care” skills that traditionally are neither assessed nor weighted significantly in the determination of the final clerkship grade. These activities and skills should be considered an essential clinical experience or important attribute for patient care and should contribute to a student’s final grade or summary. Skills that could be observed and assessed include patient advocacy (eg, addressing patient social determinants of health), student initiative, team collaboration, and self-improvement.^{46,59} Formally observing and assessing these skills signals to students the value of this competency in their professional development. An example of a patient advocacy domain and assessment rubric is in [Appendix C](#) (available online).

Institution/Organization

The factors that perpetuate inequities in clerkship grading that we consider to be in the institution/organization domain relate to large-scale issues such as the explicit and implicit norms of the learning environment, hidden curriculum, policies, and guidelines. Strategies relate to transparency, partnership with institutional stakeholders, and institutional oversight to ensure equity and mitigate bias and structural racism in the curriculum, learning environment, and assessment.

Access to learning resources. It is critical to ensure that all learners have equitable access to learning resources and study materials for clerkship examination preparation (eg, resources for standardized test preparation).^{25,26}

Clerkship oversight of grading process. Clerkships should implement criterion-referenced and competency-based grading, rather than normative grading.^{24,26} Normative grading compares one student’s performance with the average performance of his or her peers, for example, using a predetermined number or percentage of students who can be assigned a certain grade. The clinical performance assessments that supervisors complete at the end of the rotation, which often form the majority of a student’s grade, are susceptible to individual supervisor biases. The use of a normative approach to grading students may magnify the challenges with potential bias in individual evaluations. In contrast, criterion-referenced and competency-based grading provides transparency about the behaviors needed to reach a predetermined level of achievement.

Clerkships should provide guidance on how to use individual supervisor comments to generate a final detailed narrative summary that is free of bias.²⁴ Each summary should be reviewed specifically to ensure that biased language (eg, gendered language) is not used.

Clerkships should limit the weight that standardized examination scores, such as National Board of Medical Examiners (NBME) subject examination scores, have in determining a student’s grade.^{24-26,60-62} Differences between population group outcomes in standardized examinations likely reflect the impact of structural racism and unequal educational opportunities on URG students.^{24,26} Limiting the weight of examination scores on final grades might also enable students to focus on other important patient skills that they need to develop.

Clerkship leaders should recommend against standardized test score cut-off for honors grades.⁶² Analysis of differences in clerkship performance based on URG status suggests that attributes linked to performance on high-stakes multiple-choice examinations may be responsible for differences in clerkship performance assessment.^{24,25} Small differences in clerkship director ratings are amplified by institutional grading policies and institutionally defined eligibility criteria to the Alpha Omega Alpha honor society, which leads to lower attainment of honors grades and selection for Alpha Omega Alpha membership for URG students when compared with non-URG students.²⁴⁻²⁶ This amplification cascade can affect URG student residency training and career options and choice.

Schools should institute the use of a grading committee with diverse membership (eg, race, sex, experience) when determining grades or final level of achievement to mitigate the possible effects of the individual bias of those responsible for assigning grades and to perform holistic review.^{24,41,63} Provide faculty development to ensure committee members apply grading criteria in a standardized way.

Educational continuous quality improvement (clerkship programmatic evaluation). Clerkships should review data to identify areas of potential bias impacting students’ learning experiences and thus, assessments.²⁴⁻²⁶ This review can occur during curriculum phase/segment review and review of data analyzing equivalency of sites, and is aligned with the LCME accreditation standard requiring schools to evaluate their program’s effectiveness. This review might include an annual review of data provided by central administration of the following clerkship variables that relate to equity, including sex and URG status in distribution of clerkship grades and NBME subject examination scores; mistreatment reported by students on clerkship evaluations or school reports; and student clerkship satisfaction in areas related to race, ethnicity, and sex.

If new standardized assessments are developed, leaders should analyze by race/ethnicity/sex variables to ensure that similar biases do not exist within the new tools. Tracking these variables can identify factors in the clinical learning environment that can impact student performance, and supervisor assessment of students.

Schools should establish a senior leadership committee to oversee the annual review of clerkships, with a lens on diversity, equity, and inclusion in curricular opportunities, learning climate, and assessment.²⁵ Central administration can assist clerkship directors in monitoring these variables by providing mechanisms, for example, anonymous web-based student surveys and focus groups, to annually elicit student input about diversity, equity, inclusion, and bias in the clerkship, which can impact assessments.

Institutional leaders should ensure that pro-equity training is implemented across disciplines (eg, nursing, advanced practitioners, social work, case management),⁶⁴⁻⁶⁶ and ensure that policies, processes, and the environment enhance a culture of respect and inclusion.⁶⁷

Community and Policy

While the community and policy domains are out of the scope of this paper, we acknowledge that it is imperative that larger medical education communities such as AAIM, and national organizations such as NBME, LCME, and the Accreditation Council for Graduate Medical Education, examine and re-envision their role in improving equity in clerkship grading through policy changes.

CONCLUSION

The heightened national awareness of race- and ethnicity-based health and learner inequities has led medical schools and organizations such as AAIM to critically examine the structural factors and pervasive bias that perpetuate inequities in assessment in the learning environment. Critical to this effort is the deliberate examination of institutional processes, educational practices, and systems that negatively and disproportionately affect URG students. In this Perspective, we describe a pro-equity framework for minimizing bias in clerkship assessment and grading. We structure this framework using the socioecological model and base our recommendations on the inequities in narrative language in evaluation and insidious effects of bias in clerkship assessments and grading described in the medical literature.

We believe that clerkship leaders are ideally positioned to critically examine their assessment system, implement novel strategies, and innovate the learning environment using a pro-equity lens. It is critical that clerkship leadership develop and utilize an assessment system built on the fundamental principle that all learners deserve the opportunity to attain their full potential—the concept of educational equity.

ACKNOWLEDGMENTS

The authors would like to thank Clerkship Directors in Internal Medicine Council members, and Emerald Wong for her editorial assistance.

References

1. Darzi A, Evans T. The global shortage of health workers—an opportunity to transform care. *Lancet* 2016;388(10060):2576–7.
2. Frenk J, Chen L, Bhutta ZA, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 2010;376(9756):1923–58.
3. Krupat E, Richards JB, Sullivan AM, Fleenor TJ Jr, Schwartzstein RM. Assessing the effectiveness of case-based collaborative learning via randomized controlled trial. *Acad Med* 2016;91(5):723–9.
4. Dornan T, Littlewood S, Margolis SA, Scherpbier A, Spencer J, Ypinazar V. How can experience in clinical and community settings contribute to early medical education? A BEME systematic review. *Med Teach* 2006;28(1):3–18.
5. Hodges BD, Lingard L. *The Question of Competence: Reconsidering Medical Education in the Twenty-First Century*. Ithaca, NY: ILR Press; 2013.
6. Konopasek L, Norcini J, Krupat E. Focusing on the formative: building an assessment system aimed at student growth and development. *Acad Med* 2016;91(11):1492–7.
7. Norris TE, Schaad DC, DeWitt D, Ogur B, Hunt DD, Consortium of Longitudinal Integrated Clerkships. Longitudinal integrated clerkships for medical students: an innovation adopted by medical schools in Australia, Canada, South Africa, and the United States. *Acad Med* 2009;84(7):902–7.
8. Hirsh DA, Walters L. Learning in longitudinal integrated clerkships. In: Dent J, Harden RM, Hunt D, eds. *A Practical Guide for Medical Teachers*, 5th ed Toronto, Ontario, Canada: Elsevier; 2017:84–91.
9. Paradies Y, Ben J, Denson N, et al. Racism as a determinant of health: a systematic review and meta-analysis. *PLoS One* 2015;10(9):e0138511.
10. Bailey ZD, Krieger N, Agenor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet* 2017;389(10077):1453–63.
11. Lucey CR, Saguil A. The consequences of structural racism on MCAT scores and medical school admissions: the past is prologue. *Acad Med* 2020;95(3):351–6.
12. Ross PT, Lypson ML, Byington CL, Sánchez JP, Wong BM, Kumagai AK. Learning from the past and working in the present to create an antiracist future for academic medicine. *Acad Med* 2020;95(12):1781–6.
13. Ufomata E, Merriam S, Puri A, et al. A policy statement of the Society of General Internal Medicine on tackling racism in medical education: reflections on the past and a call to action for the future. *J Gen Intern Med* 2021;36(4):1077–81.
14. Bullock JL, Lockspeiser T, Del Pino-Jones A, Richards R, Teherani A, Hauer KE. They don't see a lot of people my color: a mixed methods study of racial/ethnic stereotype threat among medical students on core clerkships. *Acad Med*. 2020;95(11S Association of American Medical Colleges Learn Serve Lead: Proceedings of the 59th Annual Research in Medical Education Presentations):S58–66.
15. Ackerman-Barger K, Boatright D, Gonzalez-Colaso R, Orozco R, Latimore D. Seeking inclusion excellence: understanding racial microaggressions as experienced by underrepresented medical and nursing students. *Acad Med* 2020;95(5):758–63.
16. *White Coats for Black Lives: Racial Justice Report Card 2019*. Available at: <https://whitecoats4blacklives.org/wp-content/uploads/2019/08/RJRC-2019-Full-Report-Final-8.28.19.pdf>. Accessed June 18, 2021.
17. Wyatt R, Laderman M, Botwinick L, Mate K, Whittington J. *Achieving health equity: a guide for health care organizations*. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2016.; . IHI White Paper Available at <http://www.ihio.org/resources/Pages/IHIWhitePapers/Achieving-Health-Equity.aspx>. Accessed June 18, 2021.

18. Hardeman RR, Medina EM, Boyd RW. Stolen breaths. *N Engl J Med* 2020;383(3):197–9.
19. Hardeman RR, Medina EM, Kozhimannil KB. Structural racism and supporting black lives – the role of health professionals. *N Engl J Med* 2016;375(22):2113–5.
20. Saha S, Guiton G, Wimmers PF, Wilkerson L. Student body racial and ethnic composition and diversity-related outcomes in US medical schools. *JAMA* 2008;300(10):1135–45.
21. Saha S, Taggart SH, Komaromy M, Bindman AB. Do patients choose physicians of their own race? *Health Aff (Millwood)* 2000;19(4):76–83.
22. LaVeist T, Nuru-Jeter A, Jones K. The association of doctor-patient race concordance with health services utilization. *J Public Health Pol* 2003;24(3-4):312–23.
23. Whitla DK, Orfield G, Silen W, Teperow C, Howard C, Reede J. Educational benefits of diversity in medical school: a survey of students. *Acad Med* 2003;78(5):460–6.
24. Teherani A, Hauer KE, Fernandez A, King TE, Lucey C. How small differences in assessed clinical performance amplify to large differences in grades and awards: A cascade with serious consequences for students underrepresented in medicine. *Acad Med* 2018;93(9):1286–92.
25. Colson ER, Pérez M, Blaylock L, et al. Washington University School of Medicine in St. Louis case study: a process for understanding and addressing bias in clerkship grading. *Acad Med*. 2020;95(12S Addressing Harmful Bias and Eliminating Discrimination in Health Professions Learning Environments):S131–5.
26. Lucey C, Hauer KE, Boatright D, Fernandez A. Medical education's wicked problem: achieving equity in assessment for medical learners. *Acad Med* 2020;95(12S Addressing Harmful Bias and Eliminating Discrimination in Health Professions Learning Environments):S98–S108.
27. Osseo-Asare A, Balasuriya L, Huot SJ, et al. Minority resident physicians' views on the role of race/ethnicity in their training experiences in the workplace. *JAMA Netw Open* 2018;1(5):e182723.
28. Wheeler M, de Bourmont S, Paul-Emile K, et al. Physician and trainee experiences with patient bias. *JAMA Intern Med* 2019;179(12):1678–85.
29. Krupat E, Camargo CA, Espinola JA, Fleenor TJ, Strewler GJ, Dienstag JL. A snapshot of underrepresented physicians 15 years after medical school. *Adv Health Sci Educ Theory Pract* 2020;25(3):711–30.
30. Tsai J. *Diversity and inclusion in medical schools: the reality*. 2018. ; . Available at <https://blogs.scientificamerican.com/voices/diversity-and-inclusion-in-medical-schools-the-reality/>. Accessed June 18, 2021.
31. Olsen LD. The Conscripted Curriculum and the Reproduction of Racial Inequalities in Contemporary U.S. Medical Education. *J Health Soc Behav* 2019;60(1):55–68.
32. Hernandez CA, Daroowalla F, LaRochelle JS, et al. Determining grades in the internal medicine clerkship: results of a national survey of clerkship directors. *Acad Med* 2021;96(2):249–55.
33. Ross DA, Boatright D, Nunez-Smith M, Jordan A, Chekroun A, Moore EZ. Differences in words used to describe racial and gender groups in medical student performance evaluations. *PLoS One* 2017;12(8):e0181659.
34. Berg K, Blatt B, Lopreiato J, et al. Standardized patient assessment of medical student empathy: ethnicity and gender effects in a multi-institutional study. *Acad Med* 2015;90(1):105–11.
35. Centers for Disease Control and Prevention (CDC). *The social ecological-model: a framework for prevention*. 2020. ; . Updated January 28 Available at <https://www.cdc.gov/violenceprevention/publichealthissue/social-ecologicalmodel.html>. Accessed March 24, 2021.
36. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q* 1988;15(4):351–77. ; . Available at http://tamhsc.academia.edu/KennethMcLeroy/Papers/81901/An_Ecological_Perspective_on_Health_Promotion_Programs. Accessed May 1, 2012.
37. Osman NY, Sloane DE, Hirsh DA. When I say . . . growth mindset. *Med Educ*. 2020;54(8):694–5.
38. Rojek AE, Khanna R, Yim JW, et al. Differences in narrative language in evaluations of medical students by gender and underrepresented minority status. *J Gen Intern Med* 2019;34(5):684–91.
39. Gender bias calculator. Available at: <https://www.tomforth.co.uk/genderbias>. Accessed June 18, 2021.
40. Project Implicit. Implicit association test. Available at: <https://implicit.harvard.edu/implicit/education.html>. Accessed March 24, 2021.
41. Frank AK, O'Sullivan P, Mills LM, Muller-Juge V, Hauer KE. Clerkship grading committees: the impact of group decision-making for clerkship grading. *J Gen Intern Med* 2019;34(5):669–76.
42. Hauer KE. *Equity in assessment guidelines and checklist*. UCSF School of Medicine Medical Education; 2020. ; . Available at <http://tiny.ucsf.edu/EquityAssessmentChecklist>. Accessed June 18, 2021.
43. Hauer KE. Writing high-quality evaluations of student performance: best practices and examples. UCSF School of Medicine Medical Education. Available at: <https://meded.ucsf.edu/sites/meded.ucsf.edu/files/inline-files/Good%20assessment%20practice%20-%20evaluation%20examples.pdf>. Accessed June 18, 2021. </bib>
44. Campbell J, Theard MA, Harrison R. The growth mindset in medical education: a call for faculty development. *EClinical Medicine* 2020;29-30:100648.
45. Plews-Ogan ML, Bell TD, Townsend G, Canterbury RJ, Wilkes DS. Acting wisely: eliminating negative bias in medical education-Part 1: the fundamentals. *Acad Med* 2020;95(12S Addressing Harmful Bias and Eliminating Discrimination in Health Professions Learning Environments):S11–5.
46. Teherani A, Perez S, Muller-Juge V, Lupton K, Hauer KE. A narrative study of equity in clinical assessment through the anti-deficit lens. *Acad Med* 2020;95(12S Addressing Harmful Bias and Eliminating Discrimination in Health Professions Learning Environments):S121–30.
47. Capers Q 4th, Clinchot D, McDougale L, Greenwald AG. Implicit racial bias in medical school admissions. *Acad Med* 2017;92(3):365–9.
48. Capers Q 4th. How clinicians and educators can mitigate implicit bias in patient care and candidate selection in medical education. *ATS Sch* 2020;1(3):211–7.
49. Alliance for Academic Internal Medicine. *Home page*. 2020. ; . Available at <https://hl.im.org/aaim/home>. Accessed March 24, 2021 [Updated].
50. Low D, Pollack SW, Liao ZC, et al. Racial/ethnic disparities in clinical grading in medical school. *Teach Learn Med* 2019;31(5):487–96.
51. Association of American Medical Colleges (AAMC). Core entrustable professional activities for entering residency – curriculum developers' guide. Available at: <https://www.aamc.org/media/20211/download>. Accessed March 24, 2021.
52. Krishnan A, Rabinowitz M, Ziminsky A, Scott SM, Chretien KC. Addressing race, culture, and structural inequality in medical education: a guide for revising teaching cases. *Acad Med* 2019;94(4):550–5.
53. Amutah C, Greenidge K, Mante A, et al. Misrepresenting race – the role of medical schools in propagating physician bias. *N Engl J Med* 2021;384(9):872–8.
54. Killpack TL, Melón LC. Toward inclusive STEM classrooms: what personal role do faculty play? *CBE Life Sci Educ* 2017;16(3):ed1.; . Available at www.lifescied.org/doi/10.1187/cbe. Accessed June 18, 2021.

55. Aronson J, Williams J. *Stereotype Threat: Forewarned is Forearmed*. New York: New York University; 2004.
56. Dweck C. *Mindset: The New Psychology of Success*. New York: Random House; 2006.
57. Telio S, Ajjawi R, Regehr G. The “educational alliance” as a framework for reconceptualizing feedback in medical education. *Acad Med* 2015;90(5):609–14.
58. Hernandez CA, Daroowalla F, LaRochelle JS, et al. Determining grades in the internal medicine clerkship: results of a national survey of clerkship directors. *Acad Med* 2021;96(2):249–55.
59. Lai CJ, Jackson AV, Wheeler M, et al. A framework to promote equity in clinical clerkships. *Clin Teach* 2020;17(3):298–304.
60. Ryan MS, Bishop S, Browning J, et al. Are scores from NBME subject examinations valid measures of knowledge acquired during clinical clerkships? *Acad Med* 2017;92(6):847–52.
61. Ryan MS, Colbert-Getz JM, Glenn SN, Browning JD, Anand RJ. Does the NBME surgery shelf exam constitute a “double jeopardy” of USMLE step 1 performance? *Am J Surg* 2017;213(2):325–9.
62. Schilling DC. Using the clerkship shelf exam score as a qualification for an overall clerkship grade of honors: a valid practice or unfair to students? *Acad Med* 2019;94(3):328–32.
63. Hauer KE, Cate OT, Boscardin CK, et al. Ensuring resident competence: a narrative review of the literature on group decision making to inform the work of clinical competency committees. *J Grad Med Educ* 2016;8(2):156–64.
64. Weller J, Boyd M, Cumin D. Teams, tribes and patient safety: overcoming barriers to effective teamwork in healthcare. *Postgrad Med J* 2014;90(1061):149–54.
65. Betancourt JR, Maina AW. The Institute of Medicine report “Unequal Treatment”: implications for academic health centers. *Mt Sinai J Med* 2004;71(5):314–21.
66. Noureddine N, Hagge DK, Kashkouli P. Student-reported attitudes during an interprofessional palliative care learning experience: implications for dual-professional identity, interdisciplinary bias, and patient outcomes. *Palliat Med Rep* 2020;1(1):307–13.
67. Plews-Ogan ML, Bell TD, Townsend G, Canterbury RJ, Wilkes DS. Acting wisely: eliminating negative bias in medical education-part 2: how can we do better? *Acad Med* 2020;95(12S Addressing Harmful Bias and Eliminating Discrimination in Health Professions Learning Environments): S16–22.

SUPPLEMENTARY DATA

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amjmed.2021.06.001>.

APPENDIX A.**OBSERVED PATIENT ENCOUNTER (OPE) SCORING (20 MIN WITH PATIENT; 25-MIN DEBRIEF)**

Category	Sub Category	Answers (Points)	Points
Data Gathering (EPA 1)			
Observed with patient	History	Pertinent positives (3) Pertinent negatives (3) Complete & accurate in organized fashion (3)	___out of 9
– 20 min total *give 5 min warning	Physical examination	Pertinent components (2) Appropriate skill (2) Correct findings (2)	___out of 6
	Doctor-patient communication	0 – Lack of rapport, little empathy, failure to act on verbal or nonverbal cues 1 – 2 – 3 – Good rapport with patient. Empathic. Recognizes and responds to verbal or nonverbal cues. 4 – 5 – 6 – Good rapport with patient. Empathic. Recognizes and responds to verbal or nonverbal cues. Develops therapeutic alliance.	___out of 6
Differential Diagnosis (EPA 2)	Identified pivotal pts(1)		___out of 4
Most likely leading diagnoses (1)			
Observed in debrief session	Appropriate can't miss/alternate diagnosis (2)		
Evaluation (EPA 3 & 4)	Appropriate test for ruling in disease (1)		___out of 3
Observed in debrief session	Appropriate test to rule out disease (1) Appropriate rationale for decision to order a test (1)		
Management (EPA 4)			
Observed in debrief session	Basics of management (3)		___out of 3
Patient Education (EPA 4)	Clear explanation in patient appropriate language		___out of 2
	Assessment of understanding Anticipatory guidance (2)		
Observed with patient			
Overall performance			___out of 3
Totals			___out of 36
Grade (Honors Manager 32-36 \High Pass Interpreter 24-31 \Pass Reporter 18-23 \Fail<18)			

APPENDIX B. GRADING RUBRIC FOR A COMPREHENSIVE NOTE WRITE-UP

Chief Complaint: 0, 1, 2 points

- 0: none
- 1: present R
- 2: includes patient's main complaint, in patient's words, and no additional information/patient information/other non-pertinent wording I

Opening sentence: 0, 3, 5 points

- 0: none
- 3: present but lacks appropriate important information, or includes information that is not important to the differential R

- 5: includes appropriate history and not distractors I

HPI: 0-15 points I

- 2: Organized
- 2: Thorough
- 4: Includes pertinent positive ROS
- 4: Includes pertinent negative ROS
- 3: Includes pertinent past history/family history/social history

Past Medical History: 0, 1, 2 points R

- 0: none
- 1: disorganized, incomplete, paragraph format
- 2: organized, thorough, bulleted format (includes surgical history, ob/gyn history if appropriate, vaccinations/developmental history if a child)

Medications: 0, 1, 2 R

- 0: nothing written (if no medications, must state so)
- 1: medications listed but uses abbreviations, trade names
- 2: medications listed, no abbreviations, generic names

Allergies: 0, 1, 2 points R

- 0: nothing listed (if no allergies, must indicate such)
- 1: allergies listed but not reactions
- 2: allergies and reactions listed, or no allergies listed as "no known drug allergies)

Social History: 0, 1 point (point system does NOT reflect a lack of importance to this!!! Please include

alcohol, tobacco, drug use, living situation, social support) R

Family History: 0, 1 point (point system does NOT reflect lack of importance) R

ROS: 0, 1 point R

- 0: none or lists only a few, not organized, includes PE or other findings, repeats information already described in HPI

- 1: thorough, excludes information written in HPI with "as in HPI" references, does not include any PE findings in ROS

Physical Examination: 0, 5, 10 points

- 0: none
- 5: incomplete, unorganized R
- 10: includes vitals, organized in appropriate order, thorough, mentions pertinent findings and pertinent negatives findings I

Summary Statement: 0, 5, 10 points

- 0: none
- 5: present but unorganized, does not include pertinent information or includes information that is not pertinent or incorrect I
- 10: organized, includes pertinent HPI, PE and data leading to differential diagnosis M

Problem list, Assessment/Plan with differential: total of 50 points

Problem list: 0, 2, 5 points

- 0: none listed
- 2: present but incomplete I
- 5: organized, thorough, complete; includes cc; in order of acuity M

Differential diagnosis: 0, 10, 20 points

- 0: none R
- 10: less than 3 items on differential I
- 20: at least 3 items on the differential, includes the cc as a problem for clinical reasoning M

Clinical reasoning: 0, 5, 10, 15, 20 points

- 0: none
- 5: minimal reasoning, does not list most likely diagnosis or must not miss diagnosis R
- 10: more thorough, but not organized into "differential, workup, treatment"

15: thorough and organized, works through differential, describes why and why not diagnoses should be considered, includes most likely diagnosis (and describes this), includes must not miss diagnoses when appropriate; organized into “differential, work up, treatment plan” format I

20: differential and clinical reasoning “wows”; reasoning is advanced; M

Overall organization and prioritization: 0-4 points

Organized, extraneous information removed, edited information from auto-population

Reporter = 0-37

Interpreter = 38-80

Manager = 81-100

Reviewer: _____

Total points & Grade: _____

Rusiecki J, Pincavage AT. University of Chicago Internal Medicine Clerkship, 2019.

Adapted with permission from:¹ Bynum D, Colford C, McNeely D. Writer’s workshop: teaching preclinical medical students the art of the patient “write-up”. *MedEdPORTAL*. 2014;10:9805.

HPI = ; PE = ; ROS = .

APPENDIX C.
EXAMPLE OF AN ASSESSMENT ITEM FOR THE DOMAIN OF “PATIENT ADVOCACY”

	0	5	1	1.5	2	2.5	3	3.5	4
19. Patient Advocacy: Competency domain of Interpersonal Communication and Professionalism*	<input type="checkbox"/> Not observed	<input type="checkbox"/> 0-1	<input type="checkbox"/> 1 Does not identify sociocultural factors that impact patient care, including (but not limited to) race, religion, culture, gender identity, sexuality, primary language, immigration status, and disability (ability) as important to patient care.	<input type="checkbox"/> 1-2	<input type="checkbox"/> 2 Can identify sociocultural factors that impact patient care, including (but not limited to) race, religion, culture, gender identity, sexuality, primary language, immigration status, and disability (ability) BUT requires prompting to analyze these factors in the context of an individual patient's care.	<input type="checkbox"/> 2-3	<input type="checkbox"/> 3 Identifies sociocultural factors that impact patient care, including (but not limited to) race, religion, culture, gender identity, sexuality, primary language, immigration status, and disability (ability). AND is able to consider these factors in the context of an individual patient's care, demonstrating understanding of the specific factors impacting that individual's care.	<input type="checkbox"/> 3-4	<input type="checkbox"/> 4 Identifies sociocultural factors that impact patient care, including (but not limited to) race, religion, culture, gender identity, sexuality, primary language, immigration status, and disability (ability). AND incorporates these factors in the individual patient's care AND implements solutions to overcome barriers.

From the University of California School of Medicine, San Francisco (UCSF) Internal Medicine Clerkship, 2021.

Supplementary Reference

1. Bynum D, Colford C, McNeely D. Writer's workshop: teaching preclinical medical students the art of the patient "write-up". MedEdPORTAL. 2014;10:9805.