Bias Reporting in the Clinical Learning Environment: A National Survey of Internal Medicine Clerkship Directors

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Abstract

Purpose

Bias exists in the internal medicine (IM) clinical learning environment; however, it is unclear how often bias is identified by clerkship directors (CDs), how bias is addressed, and whether best practices exist for identifying or mitigating bias. This study investigated how IM CDs receive and respond to bias reports in the clinical learning environment.

Method

In May 2021, the Clerkship Directors in Internal Medicine (CDIM) created an 18-question survey assessing the frequency of bias reports, macroaggressions and microaggressions, and report outcomes. Of the 152 U.S. medical schools that met study accreditation criteria, the final survey population included 137 CDs (90%) whose medical schools held valid CDIM membership.

Results

Of the 137 surveys sent, 100 were returned (survey response rate, 73%). Respondents reported a median of 3 bias events (interquartile range, 1–4; range, 0–50) on the IM clerkship in the past year. Among 76 respondents who reported 1 or more event, microaggressions represented 43 of the 75 total events (57%). No mechanism emerged as the most commonly used method for reporting bias. Race/ethnicity (48 of 75 [64%]) and gender (41 of 75 [55%]) were cited most as the basis for bias reports, whereas the most common sources of bias were student interactions with attending physicians (51 of 73 [70%]) and residents (40 of 73 [55%]). Of the 75 respondents, 53 (71%) described the frequency of bias event reports as having increased or remained unchanged during the past year. Only 48 CDs (49%) responded that they were "always" aware of the outcome of bias reports.

Conclusions

Bias reports remain heterogeneous, are likely underreported, and lack best practice responses. There is a need to systematically capture bias events to work toward a just culture that fosters accountability and to identify bias events through more robust reporting.

A central mission in undergraduate medical education (UME) is creating clinical learning environments (CLEs) that are welcoming, inclusive, free of mistreatment, and structured to mitigate the negative impacts of bias. Systems that emphasize accountability at the individual and organization levels, known as just culture systems, promote open, transparent event reporting that enables organizations to improve behaviors of individuals and the organization itself.[1] Evidence suggests that these organizational models and reporting systems can be applied toward reducing unprofessional behaviors in academic CLEs.[2]

Internal medicine (IM) clerkship directors (CDs) attempt to cultivate optimal CLEs by embedding students at sites with rich learning opportunities, supportive preceptors, and opportunities for clinical and professional growth.[3] Inclusive learning environments may promote better patient care through diversity of thought.[4] However, studies of the constructed learning climate have demonstrated student susceptibility to issues such as stereotype threat (in which an individual experiences an anxiety state resulting from the risk of conforming to a negative stereotype of their social group, impacting that individual's performance), microaggressions (interactions or behaviors that communicate negative attitudes toward groups underrepresented in medicine), and macroaggressions (defined here as overtly discriminatory interpersonal acts, although historically defined as systems-level aggression toward particular groups).[5–9] Biased CLEs inhibit learning, impede professional development, and introduce inequity in assessments.[10,11]

Although studies have demonstrated that these biases are apparent, it is unclear how often bias is identified by CDs or other curricular leaders, how it is addressed, or whether best practices exist for identifying or mitigating bias in the CLE. Medical schools are required by the Liaison Committee on Medical Education (LCME) to ask about mistreatment, but there is no requirement to clarify the nature of reported mistreatment or explicitly ask about bias. Some institutions may ask specific questions about instances of bias or events or conditions leading to a suboptimal learning environment, whereas others may not. Institutions may not have built the trust required for students to feel comfortable reporting bias; students may fear reprisal, doubt the bias reporting process, or mistrust their supervisors.[12,13] Additionally, there may be variability in the actions taken by educational leaders in response to reports, from individual feedback to systemic change.

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In this study, we surveyed IM CDs to determine how they receive and respond to reports about bias in the CLE. Clerkship directors require data to characterize the nature and extent of bias in the CLE. With a better understanding of where and how IM clerkship students experience bias, educational leaders can act to promote an optimal learning climate for students.

Method

The Clerkship Directors in Internal Medicine (CDIM) is a charter organization of the Alliance for Academic Internal Medicine (AAIM), a nonprofit professional association that includes academic faculty and leaders responsible for UME clinical training. CDIM has conducted annual research surveys on topics essential to UME since 1999.

In May 2021, the CDIM Survey and Scholarship Committee (SSC) blind reviewed and selected 3 sections for the CDIM Annual Survey of Internal Medicine Core Clinical Clerkship Directors through a competitive process. The section on bias was developed by the authors through an iterative process between section authors and SSC members, including subject matter experts with extensive experience in the clinical clerkship setting. We began by identifying a theoretical framework that underpins bias in the CLE.[14] We then hypothesized that, based on prior work, timely reporting of bias events by students is limited and varies by institution.[7,8] We chose the term *bias event* to encompass a student's experience with macroaggressions, microaggressions, and any other perceived form of bias in the CLE. From that framework, we developed an initial series of questions to measure the frequency of bias reporting in IM clerkships, the source and content of bias reports, the characterization of events (or whether reports were sufficiently detailed to characterize events), the methods for reporting events, and reporting outcomes. Questions underwent multiple revisions and were pilot tested by experts in clinical CLEs to ensure general item validity and consistency. The writing group followed prior published guidelines to optimize question clarity and content.[15,16]

The final survey consisted of 18 questions (several with subparts), including multiple choice (single best answer and multiple response with write-in fields for "other"), Likert scale, numeric entry questions, and open-text essay questions. We included definitions for the terms *bias event, microaggression*, and *macroaggression* to clarify and standardize these concepts for survey respondents. We defined *bias event* as any experience including but not limited to interpersonal interactions, environments, policies, or procedures that is perceived by a student to express positive or negative preferences about a particular group; *microaggression* as a statement, action, or environmental cue regarded as an instance of indirect, subtle, or unintentional discrimination against members of a group that has been marginalized; and *macroaggression* as an obvious, intentional, overt insult or action for which there is no chance of a mistake on the part of the transgressor to be provoking, discriminatory, or otherwise demeaning.[17,18] Because of conditional logic or item nonresponse, denominators for some questions did not sum to the total number of survey respondents. See Supplemental Appendix 1 (http://links.lww.com/ACADMED/B476) for the complete thematic survey section instrument.

In late July 2021, AAIM survey staff (M.K.) programmed the instrument in the Qualtrics Surveys platform (Qualtrics XM, Provo, Utah). To screen for problematic question content, we analyzed all pilot test data for anomalies (e.g., illogical response combinations or out-of-scope values), which were resolved by the SSC. In September, M.K. exported from the AAIM/CDIM membership database all individuals designated as CDs at eligible U.S. medical schools with full or provisional LCME accreditation and CDIM membership. (Generic respondent identifiers were appended to respondent contact files before uploading them to the survey software to match them back to the survey database, which included prepopulated characteristics, such as medical school classification [public or private].) Unique participant URLs were disseminated via email through Qualtrics Surveys on behalf of the CDIM SSC. Of the 152 U.S. medical schools that met study accreditation criteria, our final survey population included 137 CDs whose medical schools held valid CDIM membership, representing 90% of all fully and provisionally accredited LCME schools. The study (21-AAIM-120) was declared exempt by the Pearl Institutional Review Board according to 21 CFR §56.104 and 45 CFR §46.104(b)(2):(2). Only M.K. had access to the survey population and survey software during fielding.

The survey launched on October 5, 2021, closed on December 7, 2021, and included 3 email reminders to nonrespondents. No participation incentives were offered. All email communications included voluntary opt-out links, and the survey landing page included an informed consent statement and information regarding human subject research protections.

Before deidentifying the results, we merged respondents' records with the complete population file to include demographic and medical school characteristics. M.K. performed all statistical analyses. We used descriptive statistics to report the summary results (median and interquartile range for most continuous variables because of their nonparametric distribution) and Fisher exact test or Pearson χ^2 test (with 1 *df*) to test for associations among categorical variables. Comparisons between dichotomous and nonparametric continuous variables included the Mann–Whitney *U* test for association; we used the Kruskal–Wallis equality-of-populations rank test for comparisons involving more than 2 categories. To control for medical school class size when determining the extent of bias reporting per student, we divided the number of reported events by the self-reported number of students in each class for the academic year and multiplied it by 100. To estimate the internal consistency of a question about actions taken in response to bias reporting, the Cronbach α was reported with mean interitem correlation; an $\alpha \geq 0.70$ was considered acceptable for consistency.[19] We used an $\alpha = 0.05$ to designate statistical significance and conducted analyses in Stata SE software, version 16.1 (StataCorp, College Station, Texas).

Results

Of the 137 schools sent surveys, 100 responded, for a response rate of 73%. There were no statistical associations ($P > .05$ for all test results) between respondents and nonrespondents based on medical school classification (public or private), size (number of enrolled students), U.S. Census region, LCME accreditation year, or CD self-reported gender (see Supplemental Appendix 2 at http://links.lww.com/ACADMED/B476).

Mechanisms of bias reporting

Respondents reported a variety of mechanisms to identify bias events involving students in the clerkship (Table 1). Ninety-seven respondents (97%) reported at least 1 mechanism for bias reporting. Bias events were identified through informal processes (including emails and casual conversations with CDs) and more formal mechanisms (e.g., mid-clerkship meetings, clerkship evaluations, the Association of American Medical Colleges Graduation Questionnaire, and schoolwide reporting systems). The highest-reported methods for identifying bias were emails to the CD (n = 54) and end-of-clerkship evaluation (n = 54). However, 21 respondents (26%) reported that there was no single-most common method for identifying bias events.

Frequency of bias reports

Seventy-six of 98 respondents (78%) identified 1 or more bias events reported in the IM clerkship during the previous 12 months. The median number of reported bias events was 3 (interquartile range [IQR], 4–1; range, 0–50); when accounting for medical school class size, the median number of bias reports per 100 students was 1.7 (IQR, 2.7–0.6) (Table 2). Among 72 of 76 respondents (95%) who reported the number of events by type, the median number of microaggressions was 2 (IQR, 3–1; range, 0–20), and the median number of macroaggressions was 0 (IQR, 1–0; range, 0–5). Of all bias events reported, a mean of 2.6 reports per CD (57% of all reports) was characterized as microaggressions, a mean of 0.7 (16%) was reported as macroaggressions, and a mean of 1.2 (27%) events lacked sufficient information to be characterized. Of the 75 respondents, 53 (71%) described the frequency of bias event reports as having either increased or remained unchanged during the past year. This applied to both microaggressions (49 of 75 [65%]) and macroaggressions (43 of 75 [57%]). Only 6 respondents (8%) perceived bias event reports to be decreasing, and 16 (21%) reported that they did not know or were unsure of any change in bias event reporting frequency.

Table 1

Mechanisms for Identifying Bias Events Experienced by IM Clerkship Students: 2021 CDIM Annual Survey of IM Core Clinical Clerkship Directors

Mechanism	Mechanisms used to identify bias events, no. (%)[a]	Most common mechanisms used by IM clerkship students, no. (%)[b]
End-of-clerkship evaluation	54 (56)	12 (15)
Email to clerkship director	54 (56)	7 (9)
Evaluation of an individual faculty member by student	52 (54)	5 (6)
Informal conversations with students	45 (46)	7 (9)
Evaluation of an individual resident by student	41 (42)	0
AAMC Graduation Questionnaire	41 (42)	2 (3)
Midclerkship feedback meeting	38 (39)	12 (15)
Feedback from your institutional reporting system	34 (35)	7 (9)
Verbal report from resident	34 (35)	0
Verbal report from faculty	32 (33)	0
Clerkship exit interview	16 (17)	2 (3)
Other	5 (5)	3 (4)
None of the above	16 (17)	NA
No single-most common method	NA	21 (26)
Unsure	NA	3 (4)

Abbreviations: CDIM, Clerkship Directors in Internal Medicine; IM, internal medicine; AAMC, Association of American Medical Colleges; NA, not applicable.

[a]For 97 respondents who reported 1 or more mechanisms for identifying bias events to be available at their institution. Multiple responses were allowed; thus, the total percentage exceeds 100.

[b]For 81 respondents who reported use of 1 or more mechanisms in the first column.

Associations between medical school characteristics and bias reports

We conducted post hoc analyses to test for possible associations between medical school characteristics and bias reporting. Controlling for class size, respondents from large medical schools (≥ 100 students per class) reported more bias events per student per year compared with those from medium (65–99 students per class) or small (< 65 students per class) schools (median bias events per 100 students [IQR], 1.9 [2.7–1.4], 1.5 [2.7–0.6], and 0.7 [2.0–0.0], respectively; P = .02) (Table 2). Public schools reported fewer events overall than private schools (median bias events per 100 students [IQR], 1.5 [2.1–0.0] and 2.0 [3.8–1.1], respectively; P = .02). There were no associations between bias reporting and medical school U.S. Census region. There was no statistically significant difference in the number of bias events reported by female and male survey respondents.

Sources of bias reports

The most common student identity characteristics cited as the basis for bias reports were race/ethnicity and gender, with 48 of 75 CDs (64%) and 41 of 75 CDs (55%) receiving reports related to those identity characteristics, respectively. Nine CDs (12%) received reports about gender identity, 7 (9%) about sexual orientation, and 6 (8%) about accent or inflection in speech. Other less cited characteristics included disability status, religion, age, and cultural practices. Sources of reported bias incidents are given in Table 3; among all reports, individual interactions with attending physicians were reported most often as the source (51 of 73 [70%]), followed by individual interactions with residents (40 of 73 [55%]).

Follow-up after bias reports

When asked how often bias event reports included sufficient detail to be acted on or investigated, 33 of 82 respondents (40%), including 6 respondents who reported identifying bias events in the past but none in the past year, reported "sometimes," whereas 27 of 82 (33%) reported "rarely" or "never"; only 22 of 82 (27%) respondents reported "always" or "most of the time" (15 respondents reported unsure). Respondents identified a variety of methods to respond to reports, including sending reports to a designated person in the school of medicine (59 of 96 responding participants [62%]), delegating the reports

Table 2

Frequency of Clerkship Bias Events Reported by Internal Medicine Clerkship Directors During the Past Year by Essential Medical School Characteristics: 2021 CDIM Annual Survey of Internal Medicine Core Clinical Clerkship Directors

Characteristic	Respondents, no. (%)[a]	Bias events per 100 students, median (IQR)	P[b]
Medical school type			
Public	60 (61)	1.5 (2.1–0.0)	.02
Private	38 (39)	2.0 (3.8–1.1)	
Medical school class size[c]			
≥ 100	41 (42)	1.9 (2.7–1.4)	.02
65–99	31 (32)	1.5 (2.7–0.6)	
< 65	26 (27)	0.7 (2.0–0.0)	
Clerkship director self-reported gender[c]			
Female	55 (56)	1.9 (2.8–0.6)	.24
Male	43 (44)	1.5 (2.1–0.0)	
All respondents (total)	98	1.7 (2.7–0.6)	

Abbreviations: CDIM, Clerkship Directors in Internal Medicine; IQR, interquartile range.

[a]Two additional respondents reported, "Do not know whether any bias events were reported by students in our clerkship during the past year."

[b]Nonparametric (Mann–Whitney *U*) test used for medical school type and clerkship director self-reported gender; Kruskal–Wallis equality-of-populations rank test (2 *df*) used for class size.

[c]Derived from Alliance for Academic Internal Medicine Member database (December 2021). Response options for gender included nonbinary (*n* = 0 at the time of the study).

through an assistant CD or site director (39 of 96 [41%]), or resolving the report via an informal process (29 of 96 [30%]). Only 48 CDs (49%) reported that they are "always" informed of a report's response; a preponderance reported uncertainty of who was informed of bias reports outcomes (Table 4). The most common action in response to bias reporting was feedback provided to individuals without formal disciplinary action, followed by individual faculty coaching and removal of a faculty member from teaching roles (Figure 1). Although 63 respondents (66.3%) reported that clerkship policies could theoretically be changed in response to bias reports, only 19 (20%) noted that such reporting led to changes in policy.

Discussion

Just culture principles, such as accountability, systems design, and transparency, have traditionally been applied in health care settings to promote safety culture.[20] In the context of medical education, these principles can promote safe and healthy learning environments that are critical to learner success. Bias reporting systems can promote such cultures by creating avenues to understand and address both individual behaviors and systems issues that affect the CLE.[2]

In this national survey of IM CDs, we found that respondents reported no standardized method for either identifying instances of bias on their clerkship or ascertaining the eventual outcome of a bias report. Given the variability of reports and the prevalence of bias reports in prior studies,[21–23] it is likely that bias events are underreported overall, leading to missed opportunities for improvement in the CLE and ongoing risks to the psychological safety of trainees. CDs from larger medical schools reported more bias events than those from smaller schools, possibly because of a greater number of clerkship sites to manage or, conversely, greater capacity to develop more robust and psychologically safe cultures of reporting.

The IM clerkship is an archetypal experience for students. As a core clerkship and commonly one of the longest clerkships, students immerse themselves in the CLE and frequently experience rapid growth and development of both their clinical and professional skills. Although we observed these findings in the IM clerkship, commonalities exist between this and other clerkships. Additionally, studies have reported that other problematic behaviors, such as mistreatment, occur across all clerkships.[21,24,25] Thus, we believe these findings are broadly applicable across clinical clerkships and are relevant for all educators invested in improving the CLE throughout the UME curriculum.

We found that the 3 most common sources of reported bias events were

Table 3

Sources of Clerkship Bias Events Reported by Internal Medicine Clerkship Directors: 2021 CDIM Annual Survey of Internal Medicine Core Clinical Clerkship Directors

Source	Events, no. (%)[a]
Individual interactions with an attending physician	51 (70)
Individual interactions with a resident	40 (55)
Individual interactions with a patient or their family member	26 (36)
Individual interactions with another medical student	9 (12)
Individual interactions with another clinical member (e.g., nurse, social worker, or patient care technician)	7 (10)
Bias in the physical environment	6 (8)
Bias in clerkship grading policy	3 (4)
Bias in opportunities given to different groups of students	3 (4)
Bias in other clerkship policies and procedures	0
Individual interactions with administrative staff member (e.g., clerkship coordinator)	0
Other	2 (3)

Abbreviations: CDIM, Clerkship Directors in Internal Medicine.

[a]For 73 respondents reporting 1 or more bias events occurring during their clerkship in the past year. Multiple responses were allowed; thus, the total percentage exceeds 100.

Table 4

Responses to the 2021 CDIM Annual Survey of Core Internal Medicine Clinical Clerkship Directors Question on How Often Individuals or Groups Are Made Aware of the Response to Bias Reports[a]

Entity	Never, no. (%)	Sometimes, no. (%)	Always, no. (%)	Unsure, no. (%)
Clerkship director	1 (1)	31 (32)	48 (49)	17 (18)
Other clerkship directors at school of medicine	27 (28)	20 (21)	5 (5)	45 (46)
Department chair	12 (12)	18 (19)	23 (24)	44 (45)
Student(s) involved in the report	2 (2)	15 (15)	28 (29)	52 (54)
General student body	29 (30)	16 (16)	3 (3)	49 (51)
Individual resident or faculty member cited as source of bias-related incident	2 (2)	28 (29)	33 (34)	35 (36)
General departmental faculty	42 (43)	9 (9)	1 (1)	45 (46)

Abbreviation: CDIM, Clerkship Directors in Internal Medicine.

[a]For 97 respondents; 3 additional respondents reported that their medical school does not have a mechanism for reporting bias events.

attending physicians, residents, and patients or family members. Prior studies have documented a higher prevalence of patients and families as sources of bias events,[26,27] so it is possible that clerkship students are underreporting the patient-related bias events they experience. They may feel that there is little recourse in reporting a patient-related event and that these behaviors must be endured in their roles as patient caregivers. Alternatively, because residents and attending physicians directly contribute to clerkship grading, students may feel instances of bias more poignantly from them. Regardless, the number of reported bias events stemming from attending physicians and residents should be concerning to medical education leaders, particularly given that the reporting of events likely underestimates the total experienced.[28]

Many respondents perceived that the incidence of bias reports has been increasing. There are many possible reasons for this phenomenon. First, an increasing recognition of the pervasive and systemic effects of racism may have heightened awareness of ongoing instances of bias in clerkships that have existed previously.[29,30] Second, increasing rates of burnout among faculty, residents, and other health care workers, as well as a cultural shift in the tenor of public discourse with greater normalization of biased behavior, may have led to an increase in unprofessional behavior.[31,32] Third, CDs may be positioning themselves to be more aware of events related to the learning climate, leading to a greater openness among students in reporting issues. Further study is necessary to better understand the underlying cause(s) of this phenomenon.

On the basis of our study's results—that bias reports remain heterogeneous, are likely underreported, and are without best practice responses—CDs and medical schools should consider the following

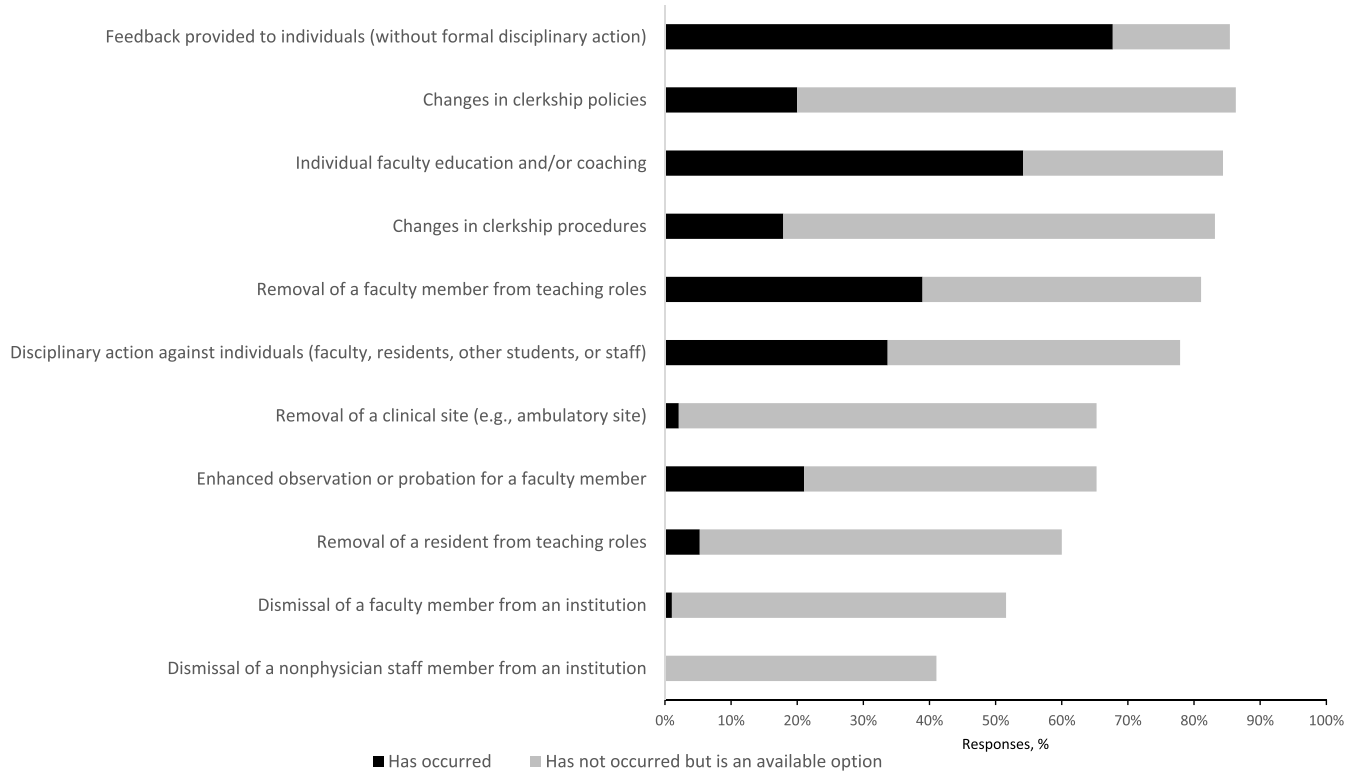

Figure 1 Responses to the 2021 Clerkship Directors in Internal Medicine Annual Survey of Internal Medicine Core Clinical Clerkship Directors question on potential actions taken in response to bias reporting (n = 95). Cronbach α = 0.90 for all items; mean interitem correlation = 0.44.

recommendations. First, there is a need to systematically capture bias events to work toward a just culture that fosters accountability for the choices people make when interacting with a system.[33] Institutional cultures must permit students to report problematic events without fear of repercussion, intimidation, or stigma. Clerkship leaders can acknowledge the potential for bias in the CLE with students and incorporate specific questions into midclerkship feedback or exit interview conversations to demonstrate their willingness to understand and address these concerns.

Second, identifying bias events through more robust reporting will only be sustained if students feel that their concerns are being addressed, which requires a process for sharing outcomes of the reports. IM CDs can partner with departmental and medical school leaders, including diversity, equity, and inclusion champions, vice-chairs for education, faculty development curriculum organizers, other CDs, and residency and fellowship directors, to develop transparent mechanisms to address bias in the CLE and promote psychological safety among students. Bias reporting and accountability systems should be created with the goal of promoting equity; they should have strong institutional support and be resourced appropriately to ensure that a disproportionate burden does not fall on those who have been traditionally underrepresented in medicine. Whenever possible, the outcomes of reports and interventions taken should be shared with the individuals expressing concerns and the student body as a whole. Student voices should be included in the process, albeit with a particular eye toward supporting students who are potentially vulnerable to bias. Aggregate, deidentified summary reports can protect the anonymity of both reporters and the sources of bias events.

Third, students, residents, and faculty should be provided with developmental and critical thinking exercises regarding identifying and responding to bias. Bystander training is an evidence-based approach that can assist learners and preceptors in responding to microaggressions and other events in clinical environments.[34] Clerkship leaders can advocate for training as an onboarding requirement for faculty who wish to rotate on teaching services and for residents as part of their residents-as-educators curriculum as required by the LCME.[35]

Strengths of our study include capturing input from a nationally representative survey with a high response rate. However, our study has certain limitations. Although we included definitions for certain terms in the survey, respondents may have interpreted the terms differently depending on their own internal constructs, thus affecting their responses to specific survey questions. Our study surveyed a nationally representative population of IM CDs, which may limit external generalizability, although the IM clerkship environment is a prototypical example of a required CLE and reflects common student experiences throughout UME. Although the 73% survey response rate was broadly representative of the population, some degree of measurement error might have been introduced by item nonresponse. Finally, as a retrospective survey of CDs, responses may have been subject to recall bias, but we note that recall bias is a greater concern when the period studied is more removed (e.g., asking about events that occurred several years ago).

In conclusion, despite having multiple means of identifying bias events in the IM CLE, respondents reported a wide range in the prevalence of bias events and a lack of transparency in the reporting process. Students may require a sense of safety and assurance of results in the reporting process to feel empowered to accurately describe their experiences. In turn, IM CDs need additional information, open collaboration, and a culture of continuous quality improvement to promote equitable CLEs.

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