Recommendations to Promote Equity in the Clerkship Clinical Learning Environment

Despite widespread recognition of inequities related to gender, race, and ethnicity in undergraduate medical education (UME), effective solutions have been difficult to identify. In this Perspective, we focus on issues specific to the clerkship clinical learning environment (CCLE).

The pre-clerkship classroom tends to be closely regulated, with standards provided by leadership and understood by teachers and learners. In contrast, the CCLE is more variable, with multiple clinical, structural, systems-based, and educational factors that may introduce or amplify inequities in learner experiences.

Adapted from the definition of health equity, educational equity describes the concept that all learners have the opportunity to attain their full potential without structural or social barriers.1 Educational equity in the CCLE depends on clerkship and other medical education leaders sharing a mental model of the CCLE scope. We base our recommendations on a conceptual framework for the clinical learning and working environment (LWE) presented by AAIM.2 We offer these recommendations from the perspective of clerkship leaders, however we recognize that inequities in the CCLE are not isolated to clerkships. We therefore recommend that clerkship and other medical education leaders collaborate to develop and implement interventions.

AAIM Conceptual Model to optimize the learning environment:

In 2017 an AAIM collaborative created a conceptual model to describe the LWE.2 This model describes four factors that interact dynamically: interconnectedness of all domains in the medical education continuum, learners at multiple stages, central role of the patient, and sociocultural context. The model also describes four domains through which educators can view the LWE: personal, relational, curricular, and structural. These domains can be used to categorize factors that impact the learning environment when analyzing and planning innovations. We organize our recommendations to promote educational equity in the CCLE using these domains (Table 1).

Personal

Acknowledging Imposter Syndrome and Stereotype threat

Background: Imposter syndrome is the syndrome of persistent self-doubt despite personal accomplishment. Prevalent in medical professionals, it has been demonstrated to be higher in women and groups historically underrepresented in medicine (UIM).3 It has been associated with lower job performance, lower job satisfaction and higher burnout.4 Stereotype threat describes when an individual’s concern for confirming negative stereotypes about their identity group leads to underperformance in a given domain.5 As students transition between clerkships, teams, and systems, they may acutely experience both phenomena, which may then diminish their sense of belonging and affect their ability to perform well in the CCLE. Systemic factors such as a lack of diverse role models may amplify these feelings. Familiarity with these concepts is therefore important for learners and their faculty/resident supervisors.
Recommendations:
- Educate students and faculty/resident supervisors about imposter syndrome and stereotype threat and their impact on learners’ experiences. This can be introduced during the pre-clerkship curriculum and in the clerkship curriculum with students and supervisors.
  - Resource: MedEdPortal curriculum on imposter syndrome
    https://doi.org/10.15766/mep_2374-8265.11166
  - Resource: Example tip sheet on topics, such as imposter syndrome and stereotype threat, to consider when leading a team orientation at the beginning of a clinical rotation
    https://ucsf.app.box.com/s/gv6wn3cqnmldhlouhyw5ul7dk3k6zkp1d
- Encourage faculty/resident supervisors to share their experiences with imposter syndrome and/or stereotype threat and share helpful strategies.

Fostering a Growth Mindset

Background: When individuals hold a growth mindset, they believe that abilities can improve through challenge and learning from failure. Alternatively when individuals hold a fixed mindset, they believe that characteristics such as talent are immutable. Attending to a growth mindset and mastery orientation in the CCLE may cultivate an environment that allows students to meet their full potential.

Recommendations:
- Encourage students to self-identify learning goals and participate in creating their own learning action plans.
- Train faculty/resident supervisors in self-theories and how to foster a growth mindset.
  - Resource: Theard et al. Figure: Racism to Anti-Racism using a Growth Mindset Framework
    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8225653/figure/fig0001/?report=objectonly
  - Resource: Example presentation on growth mindset (Appendix 1)

Relational

Cultivating Psychological Safety

Background: Psychological safety describes a person’s perceptions of the consequences of taking interpersonal risks in a particular context such as a workplace, and is a critical factor in teamwork and team learning. Tsuei et al. (2019) describe psychological safety in medical education as the “state of feeling freed from a sense of judgment by others such that learners can authentically and wholeheartedly concentrate on engaging with a learning task without a perceived need to self-monitor their projected image.” When faculty/resident supervisors foster psychological safety they strengthen team dynamics, allowing students to feel safe to explore difficult topics, take risks, and acknowledge their limits.
**Recommendations:**

- Provide faculty and residents with resources and support to help them develop the skills to cultivate a climate of psychological safety in the CCLE.
  - Resource: AHRQ Creating Psychological Safety in Teams
- Incorporate techniques such as inviting input from all team members, active listening, debriefing, recognizing the limits of one’s own knowledge, and engaging in effective feedback to engender trust and build alliances.14,15
  - Examples of phrases that can be used in either team settings or one-on-one situations:15
    - “If you see anything that concerns you, please speak up. We’re a team focused on being the best we can be for our patients and for each other, and we have to have each other’s backs.”
    - “Great point! The whole team should hear that. Can you bring it up on rounds tomorrow?”
    - “I’m not sure we’re following the guideline correctly. Let’s check together.”

**Recognizing Implicit Bias and Addressing Mistreatment**

**Background:** Implicit bias refers to attitudes or stereotypes that unconsciously affect our understanding, actions, and decisions. They can be difficult to recognize, acknowledge, and manage and can have negative consequences on the CCLE, learners and faculty, clinical decision-making, and quality of care.16,17 When faculty and learners confront their own biases and understand the sociocultural context for their biases, they can foster mutual understanding, respect and unlearn stereotypes.19

Mistreatment encompasses “microaggressions” (the subtle, intentional or unintentional, insults or behaviors against a member of a historically marginalized group) and “macroaggressions” (the overt aggressions and discrimination against a member of a historically marginalized group).20 Microaggressions in the CCLE can cause psychological distress, depression and anxiety21 by triggering stereotype threat and increased cognitive load, for example.5 Mistreatment from patients also affects emotional well-being and detracts from the CCLE.22 Students have described uncertainty around how to respond to these encounters.22

**Recommendations:**

- Incorporate implicit bias recognition and management training in faculty and resident development programs.
  - Key features: creating a safe learning context; increasing knowledge about the science of implicit bias; emphasizing how implicit bias influences behaviors and patient outcomes; increasing self-awareness of existing biases; improving
conscious efforts to overcome implicit bias; and enhancing awareness of how bias influences others.\textsuperscript{18}

  \url{https://implicit.harvard.edu/implicit/takeatest.html}

- Resource: MedEdPortal curriculum on responding to implicit bias\textsuperscript{23}  

- Educate teams on how to recognize and address all forms of mistreatment
  - Preemptively ask all students their preferences in how to manage situations, including individual or team debriefs and support for the student, or no debriefs.\textsuperscript{24} This approach promotes psychological safety and empowers the student.\textsuperscript{24} Include this information in team orientation emails for wide dissemination and review it at annual resident and faculty meetings
  - Resource: Bullock et al. Figure 1: Bystander microaggression intervention guide\textsuperscript{24}  
    \url{https://journals.lww.com/academicmedicine/Fulltext/2021/11001/No_One_Size_Fits_All__A_Qualitative_Study_of.15.aspx}
  - Resource: MedEdPortal curriculum on responding to mistreatment\textsuperscript{25}  
    \url{https://www.mededportal.org/doi/10.15766/mep_2374-8265.11168}

\textbf{Curricular}

\textbf{Cultural humility, inclusivity, and belonging}

\textbf{Background}: Although educators have long used cultural competency as a framework for education regarding race, culture, and social determinants of health, there is growing recognition that this framework may have the unintended consequence of propagating stereotypes.\textsuperscript{26} Educators are therefore reframing the competency as cultural humility, reflecting a more self-aware and inclusive perspective. A review of clerkship teaching cases by Krishnan et al. (2019) identified six common mistakes faculty make when using race and culture in teaching materials.\textsuperscript{27} They include using race as a genetic risk factor without acknowledging the social and structural causes of disparities; associating disease with individual behaviors without providing the context of social and structural factors; describing patients using reductionist and essentialist portrayals of non-Western cultures and people of color; ignoring or portraying a sense of futility in addressing social and structural causes of disease and illness; developing cases that lack critical reflection on health disparities and implicit bias; and not portraying minority identities among faculty, students and patients that accurately reflect the current U.S population.\textsuperscript{27} Inclusion of education on gender, sex, and sexuality is also critical for promoting equity in medical education.\textsuperscript{28}

\textbf{Recommendations}:

- Include diversity, equity and inclusion (DEI) in clerkship curricular objectives.
  - For example, include the Association of American Medical Colleges (AAMC) core Entrustable Professional Activity (EPA) 5.5: “Demonstrates sensitivity and responsiveness to a diverse patient population, including but not limited to
diversity in gender, age, culture, race, religion, disabilities, and sexual orientation”. 29

- Be intentional with the use of race, gender, and sexual identity in teaching cases and materials. Several evidence-based resources exist to guide this process. 27,30
  - To identify potential bias when reviewing/writing a case, ask three things: 1) Does the case involve a patient of color and/or minority culture? (2) Is attribution of a patient’s health belief or practice made to cultural values, beliefs or practices? and (3) Is guidance provided on how to approach minority patients (based on their “unique belief systems” as a group)? If the answer is yes, consider editing to mitigate bias.

- Do not use race routinely in the history of present illness. If race or ancestry is relevant to the case, it may be discussed in the social history or in family history. 31,32
  - Resource: Guidelines on the use of race as patient identifiers in clinical presentations. 32

- Teach how to ask about a person’s self-identified racial, ethnic, gender and sexual identities, preferred language, and accommodations used or needed.

- Teach and role model use of preferred name, pronunciation, and pronouns in classroom and clinical settings. 28
  - Resource: a helpful website that provides a review for those unfamiliar with the use of pronouns https://www.mypronouns.org/
  - Include pronouns in orientation introductions.

- Acknowledge the current controversies in race-based medicine practice such as the use of race in clinical algorithms (ASCVD risk) and study interpretation (kidney function and pulmonary function tests). 34
  - For example, state that there is a widespread current discussion about race-based medical practice, and that it is important and it is evolving. 35

- Contextualize group differences in disease/illness burden by identifying social determinants of health and racism rather than race as risk factors for illness. 31,36

**Structural**

**Use of certified interpreters**

**Background:** Professional interpreters have been shown to improve the care for patients with limited English proficiency (LEP) in the areas of communication (errors and comprehension),
utilization (shorter length of stay and lower readmission rates), clinical outcomes, and satisfaction.\textsuperscript{37,38} Professional interpretation services are required by law at any institution receiving federal funding (Title VI of the Civil Right Act and the Executive order 13166).\textsuperscript{39}

Students who speak a second language may be asked to interpret for patients with LEP even when not fluent or certified.\textsuperscript{40} Use of ad-hoc interpreters has been demonstrated to compromise patient safety and patient care.\textsuperscript{41} While interpreting can be an opportunity for students to contribute to patient care, it can detract from their role as a learner. Maintaining a distinction between their clinical and interpreter roles can be challenging and can introduce inequities.\textsuperscript{42}

Recommendations:

- Recommend teams work with certified interpreters. Discourage using students as ad-hoc interpreters.
  - Add this information to team orientation emails for wide dissemination to students and supervising physicians.
- Allow certified student interpreters to volunteer to interpret for team patients (opt-in approach). Supervisors should not ask students to interpret for multiple patients as this may detract from their role as a learner.
- Encourage all students to work with patients with LEP and to utilize interpretive services.
  - Resource: Example handout on use of certified interpreters (Appendix 2)

Faculty educational opportunities: Mitigating the effect of “minority tax” and “affinity bias”

Background: Faculty from UIM groups are often asked to take on extra responsibilities in medical education, e.g., mentoring UIM learners or teaching DEI-related concepts. While many UIM faculty may take pride in contributing to DEI efforts, they are often not compensated or given time to support their efforts. This has been described as a “minority tax”.\textsuperscript{43}

Educational leaders may be prone to “affinity bias,” the unconscious favoring of faculty with shared connections or backgrounds.\textsuperscript{44} This bias may cause leaders to preferentially offer educational opportunities and possible career advancement to certain faculty members.

Recommendations:

- Create a “request for application” (RFA) process for all clerkship teaching and mentoring opportunities. This request should include a description of the opportunity and selection criteria and should be disseminated widely within relevant settings.
- Be deliberate in recruitment and hiring efforts and intentionally include UIM faculty as educators for all clerkship topics, not exclusively DEI topics.

Educational Continuous Quality Improvement
Background: Adopting a culture of quality improvement (QI) means shifting focus from individual blame to system responsibility. The educational continuous QI (ECQI) process includes monitoring programmatic variables related to identity to evaluate for differences between groups, and a review of mistreatment reports submitted by students to assess for bias-related events and opportunity for action. It is critical to adopt an approach of system responsibility to support psychological safety and encourage growth mindset in supervisors.

Recommendations:

- Build anonymous reporting mechanisms to gather student reports about the CCLE and mistreatment. This can include an automated process that reviews anonymous course evaluation comments for reports of bias.

- Review school-collected quantitative and qualitative data on variables that relate to the CCLE and equity and inclusion, as part of the annual clerkship review process (e.g., metrics that could be related to an inequitable learning environment). Utilize QI techniques to address data systematically.
  - Metrics could include differences in numerical performance and grades by certain demographics.
  - Other data can include the number and type of mistreatment experiences reported by students, and a review of student satisfaction with the clerkship to identify areas of concern.

- Seek out additional verbal feedback from students through non-evaluating staff or faculty, as formal course evaluations may not capture inequitable learning experiences.

Conclusion

In this Perspective, we describe evidence-based recommendations to address inequities in the CCLE using AAIM’s conceptual model as a framework. We believe that clerkship leaders and other medical education leaders can partner together to address and implement strategies to promote equity in the CCLE.

References:

[x]


9. Canning EA, Muenks K, Green DJ, Murphy MC. STEM faculty who believe ability is fixed have larger racial achievement gaps and inspire less student motivation in their classes. Sci Adv. 2019 Feb 15;5(2):eaau4734. doi: 10.1126/sciadv.aau4734. PMID: 30793027; PMCID: PMC6377274.


Acknowledgements:
These recommendations were developed by a work group of CDIM members:
Recommendations to promote equity in the clerkship clinical learning environment (CCLE) using the AAIM conceptual model (Adapted from Table 2 of Jaffe et al. 2019)

<table>
<thead>
<tr>
<th>AAIM Conceptual Model Domain and Definition</th>
<th>Suggested topics</th>
<th>Recommendations for clerkship and medical education leaders</th>
<th>Feasibility (high, moderate, low) of implementation led by Clerkship Director*</th>
</tr>
</thead>
</table>
| Personal  
The lens through which a learner experiences the CCLE and the intrinsic qualities the learner adds. | Imposter Syndrome and Stereotype Threat | Clerkship and other medical education leaders should collaborate to develop and implement action plans, as inequities in the CCLE are not isolated to core clerkships | Moderate |
| • Educate students and faculty/resident supervisors about imposter syndrome and stereotype threat and their impact on learners’ experiences  
• Encourage faculty/resident supervisors to share their experiences with imposter syndrome and/or stereotype threat and share helpful strategies. |                                                                                     |                                                                                     |
| Growth mindset | • Encourage students to self-identify learning goals and participate in creating their own learning action plans.  
• Educate faculty/resident supervisors in self-theories and how to foster a growth mindset. |                                                                                     | Low to Moderate |
| Relational  
The ways in which individuals or groups interact and the impact of these interactions upon learners and the CCLE as a system. | Psychological safety | • Provide faculty and residents with resources and support to help them develop the skills to cultivate a climate of psychological safety in the CCLE.  
• Incorporate techniques such as inviting input from all team members, active listening, debriefing, engaging in effective feedback to engender trust and build alliances. | Low to Moderate |
| Implicit bias and mistreatment | • Incorporate implicit bias recognition and management training in faculty and resident development programs.  
• Educate teams on how to recognize and address all forms of mistreatment. |                                                                                     | Low to Moderate |
| Curricular  
Factors relating to formal and educational experiences, and includes a process | Cultural humility, inclusivity, and belonging | • Include DEI in the curriculum objectives.  
• Be intentional with the use of race, gender and sexual identity in teaching cases and materials.  
• Do not use race routinely in the HPI. If race or ancestry is relevant to the case, it may be discussed in the social history, or in family history. | High |
of learner assessment and feedback. Hidden curriculum is part of this domain, though this overlaps with other domains.

| Structural The organizational, programmatic, and physical context within which clinical learning occurs. Components can be specific to the local CCLE, or may be externally defined. | Use of certified interpreters | • Teach how to ask about a person’s self-identified racial, ethnic, gender and sexual identities, preferred language, and accommodations used or needed.  
• Teach and model use of preferred name, pronunciation, and pronouns in classroom and clinical settings.  
• Acknowledge the current controversies in race-based medicine practice such as the use of race in clinical algorithms and study interpretation. | High |
| --- | --- | --- | --- |
| | Faculty educational opportunities: Mitigating the effect of “minority tax” and “affinity bias” | • Recommend teams work with assigned certified interpreters. Discourage using students as ad-hoc interpreters.  
• Allow certified student interpreters to volunteer to interpret for team patients (opt-in approach).  
• Encourage all students to work with patients with limited English proficiency and to utilize interpretive services. | High |
| | Educational continuous quality improvement | • Create a “request for application” (RFA) process for all clerkship teaching and mentoring opportunities. The RFA should include a description of the opportunity and selection criteria and should be disseminated widely within relevant settings.  
• Be deliberate in recruitment and hiring efforts and intentionally include UIM faculty as educators for all clerkship topics, not exclusively DEI topics. | High |
| | Educational continuous quality improvement | • Regularly review school-collected data that relates to the CCLE and equity and inclusion, as part of the annual clerkship review.  
• Seek out additional verbal feedback from students through non-evaluating staff or faculty, as formal course evaluations may not capture inequitable learning experiences.  
• Build centrally-supported, anonymous reporting mechanisms to gather student reports about the CCLE and mistreatment. | Moderate to High |

*High feasibility: Multiple resources already exist and can be readily adapted, i.e., CD can implement on own, with minimal need to develop new content; Low feasibility: Fewer resources exist and may require more content development with external groups, e.g., central medical school or hospital system leadership, content experts.
Beyond Competency: Growth and Improvement as Core Medical and Medical Education Values

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Dean of Students, Pritzker School of Medicine
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Growth Mindset

Carol Dweck, PhD

- Lewis and Virginia Eaton Professor of Psychology at Stanford University
- American Academy of Arts and Sciences
- National Academy of Sciences
- Distinguished Scientific Contribution Award from the American Psychological Association
Notions of Intelligence
Fixed vs Growth Mindset

Fixed
• Your intelligence is something very basic about you that you can’t change very much.
• You can learn new things, but you really can’t change how intelligent you are.

Growth
• No matter how much intelligence you have, you can always change it quite a bit.
• You can always substantially change how intelligent you are.
Fixed and Non-Fixed Notions of Intelligence

Incremental: Intelligence is flexible
Entity: Intelligence is fixed

Figure 1. Graph of interaction effect of theory of intelligence and time on math achievement: Growth curves of predicted mathematics grades over 2 years of junior high school for students with incremental (+1 SD above the mean) and entity (−1 SD below the mean) theories of intelligence.

Changing View of Intelligence Helps

Control: Students from “Fixed” cohort without intervention
Experimental: Students from “Fixed” cohort with growth intervention at Time 2

Figure 3. Predicted math grades by experimental condition.

Response to Errors / Mistakes
Learning Goals Impact Motivation and Performance after Errors

<table>
<thead>
<tr>
<th>Goal</th>
<th>Study 4</th>
<th>Study 5</th>
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</thead>
<tbody>
<tr>
<td>Learning</td>
<td>No decrease in intrinsic motivation</td>
<td>Higher intrinsic motivation at beginning and end of course</td>
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<td></td>
<td>Less time and effort withdrawal</td>
<td>Higher grades</td>
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<td></td>
<td>Effort attributions</td>
<td>Greater improvement over time</td>
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<td></td>
<td>Planning</td>
<td>Deeper processing</td>
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<td></td>
<td>Seeking positive reinterpretation and growth</td>
<td>Lower grades after repeated poor performance</td>
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<tr>
<td>Ability</td>
<td>Lower intrinsic motivation</td>
<td>Lower grades after repeated good performance</td>
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<td></td>
<td>Loss of self-worth</td>
<td>Higher grades</td>
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<td></td>
<td>Low ability attributions</td>
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<tr>
<td></td>
<td>Time and effort withdrawal</td>
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<tr>
<td></td>
<td>Rumination</td>
<td></td>
</tr>
</tbody>
</table>
Mindset Matters… (ethic and ways of knowing)

**Growth Mindset**
- When I fail / make errors, I learn
- I like to challenge myself
- My effort and attitude determine everything
- **My growth is the most important thing**

**Fixed/Ability Mindset**
- Avoid failure / errors at all costs
- Challenges make me anxious
- My abilities determine everything
- **My performance is the most important thing**
Use of Certified Interpreters in Clinical Clerkships
Monica Vela, MD

Why should professional interpreters be utilized?

- Professional interpreters are required by law at any institution receiving federal funding (Title VI of the Civil Right Act and the Executive order 13166) (Chen et al 2007).
  - communication (errors and comprehension)
  - utilization (shorter hospital stays and lower rates of re-admission for the same diagnoses)
  - clinical outcomes
  - satisfaction with care

Why shouldn’t students routinely serve as interpreters?

- Students who speak a second language, including some from populations underrepresented in medicine (UIM), are asked to serve as ad hoc interpreters for multiple patients with LEP even when they may not have the fluency or certification to do so (Vela et al 2016).
- Use of ad hoc interpreters has been demonstrated to compromise patient safety and patient care often by misinterpreting or omitting up to half of physician’s questions and committing errors of clinical significance (Flores et al 2003).
- While many medical schools deliver medical Spanish coursework, few provide certification exams to demonstrate appropriate fluency (Morales et al 2015). In one multi-institutional study, less than 3% of medical students providing interpretation services in clinical settings had passed a certification exam (Vela et al 2016).

What are recommended practices for interpreter use when working with students?

- Supervising faculty must teach and protect patients and students from medical and legal consequences and role model appropriate use of interpreters.
- Supervising faculty have the opportunity to teach both patients and students that LEP patients have a legal right to professional interpretation services (Vela et al 2016).
- Work with certified interpreters (available in person, via tele- or video-communication), when providing care for patients with limited English proficiency (LEP) instead of using students as ad-hoc interpreters.
- If students have undergone the certification process, students can volunteer to interpret for team patients (opt-in approach), but supervisors should take care not to ask students to interpret for multiple patients on a team due to concern that this may detract from their role as a clinical learner.
- Encourage all students to experience working with LEP patients and utilize interpretive services.
How do you effectively work with a certified interpreter?

1. Request an interpreter for the visit
2. Make necessary arrangements for working with the patient by having pictograms or translated materials prepared pre-visit if possible.
3. Discuss the content of the visit with the interpreter before the patient arrives.
4. Allow for brief introductions of all parties to set up a trusting environment.
5. Position provider, patient and interpreter in a triangle so all parties can see and hear one another.
6. Practice looking at patient while speaking and pause often to allow interpreter to repeat messages. Allow patient to repeat back their understanding.

References: