IAMSE Manuals

Jacqueline M. Powell
Rachel M.A. Linger *Editors*

Best Practices for Acknowledging and Addressing Racial and Ethnic Health Disparities in Medical Education

IAMSE
International Association of Medical Science Educators

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IAMSE Manuals

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Editors

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Preface

This manual was a collaborative effort written by pre-clerkship and clerkship medical students, and basic science medical educators who are passionate about promoting accessible, equitable, and inclusive healthcare experiences for all patients. While we, as individuals, are continually and intentionally educating ourselves on the importance of diversity, equity, inclusion (DEI) in medical education, we would also like to acknowledge our limitations and shortcomings in this area prior to offering our solutions.

While we are not DEI professionals, nor do we claim to be experts on DEI in medical education, we hold incredible respect for those professionally involved in DEI and who have dedicated their lives to this work. We humbly offer this manual as a very small contribution to the efforts that so many have previously made and thank them for their progress which has enabled us to enter the conversation at this unique moment in history.

This manual was created with the intention of advancing the much-needed DEI conversations by presenting best practices and strategies gained through our own lived experiences in medical education and through our research investigations. We understand that not only is this information continuously evolving, but that intention does not equal impact; and while this manual is published with the best of intentions, there may be additional changes that are required to further increase impact.

With much humility, we invite you to please contact us with any questions, comments, suggestions, or concerns regarding the content of this manual. Our goal is to stimulate conversations to continually advance the practice of educating our future healthcare professionals to become more culturally competent, equity-minded, and inclusive healthcare professionals.

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About the Editors

Dr. Jacqueline M. Powell is an Associate Professor of Physiology at Rocky Vista University (RVU). She is the Chair of the RVU-Southern Utah Diversity, Equity, and Inclusivity (DEI) Committee and the University-wide DEI Climate Taskforce, Faculty Advisor for RVU's Asian and Pacific Islander Student Association, as well as a member of the University-wide Inclusive Excellence Advisory Council. Dr. Powell also serves as Founding Chair of the International Association of Medical Science Educators' (IAMSE) Racial Equity Committee and is a member of IAMSE's Encouraging Growth and Advocacy in Gaining Equity Committee, involved in helping the Association advance its efforts with regard to DEI. Committed to teaching about health disparities and social determinants of health, Dr. Powell has presented on mitigating implicit bias in medical curricula and currently mentors several students with research projects that promote DEI and health equity in medicine. Dr. Powell is passionate about advancing DEI in medical education and assisting students in becoming culturally proficient and equity-minded physicians.

Dr. Rachel M.A. Linger is an Associate Professor of Pharmacology at Rocky Vista University (RVU). She is a champion, student, and facilitator of educational initiatives intended to promote health equity and reduce implicit bias in healthcare. Dr. Linger has been a member of RVU's Faculty Development Committee since 2016. She was a member of RVU's Diversity, Equity, and Inclusion (DEI) Task Force for Curriculum in academic year 2020–2021. The Task Force was charged with creating an actionable plan for addressing DEI in the core curricula at RVU. In 2021, Dr. Linger was appointed to the RVU cross-campus Diversity and Inclusivity Committee. Through her roles in faculty development and DEI, she strives to ensure that faculty are equipped with the tools and skills necessary to teach with cultural humility.

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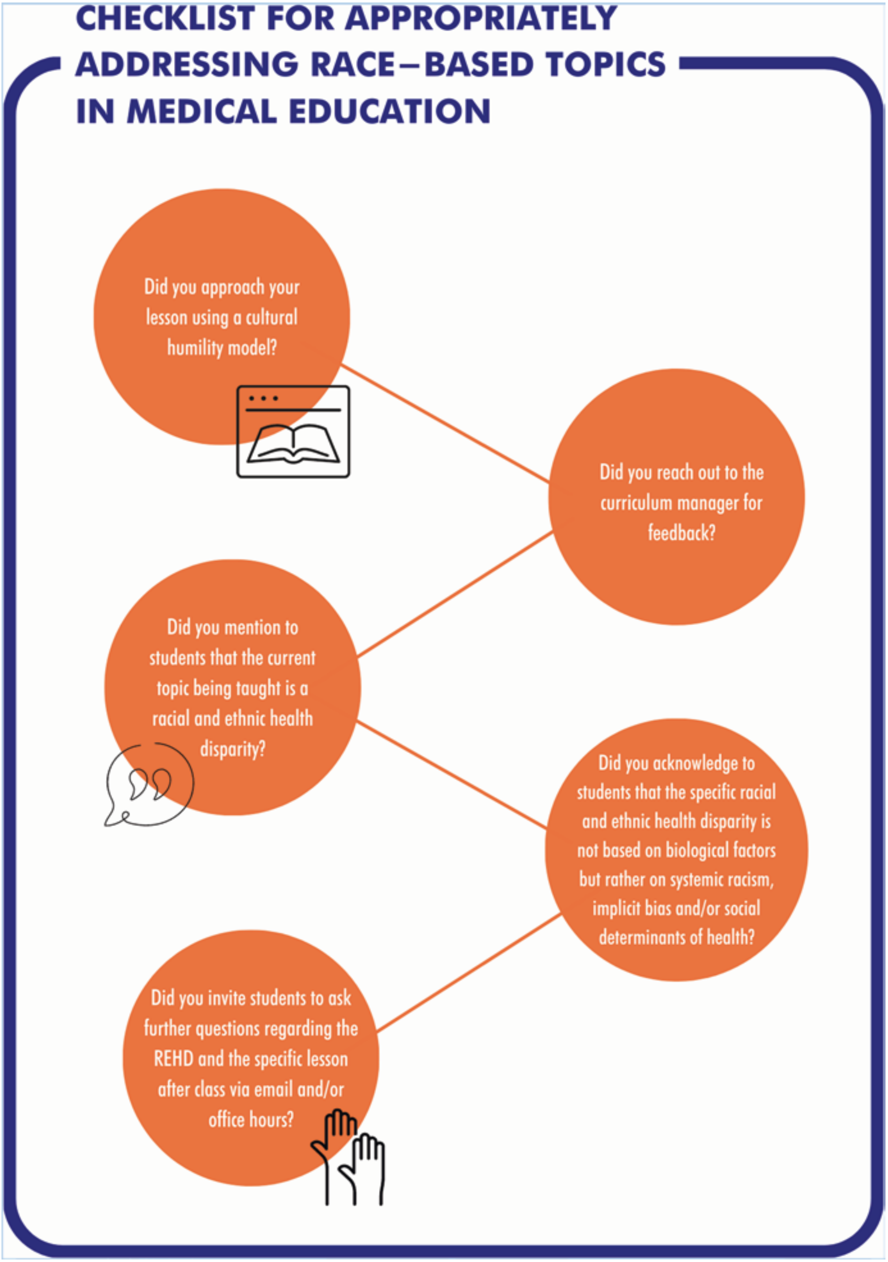
EXECUTIVE SUMMARY

Background & Purpose

Race is a human-made social construct which is the basis of discrimination across the globe. Medicine is not immune to the social constructs of our society and has adapted discriminatory practices to our own work in the forms of race as a risk factor and persistent bias among healthcare workers. This manual provides an overview of the impact of racial and ethnic health disparities on patient communities and offers practical solutions for undergraduate medical educators to ensure these disparities are not being perpetuated by what is taught in the pre-clerkship classroom. We posit that these steps will take us all closer to a more equitable medical education system and in-turn, a more equitable healthcare system.



CHECKLIST FOR APPROPRIATELY ADDRESSING RACE–BASED TOPICS IN MEDICAL EDUCATION

Did you approach your lesson using a cultural humility model?

Did you reach out to the curriculum manager for feedback?

Did you mention to students that the current topic being taught is a racial and ethnic health disparity?

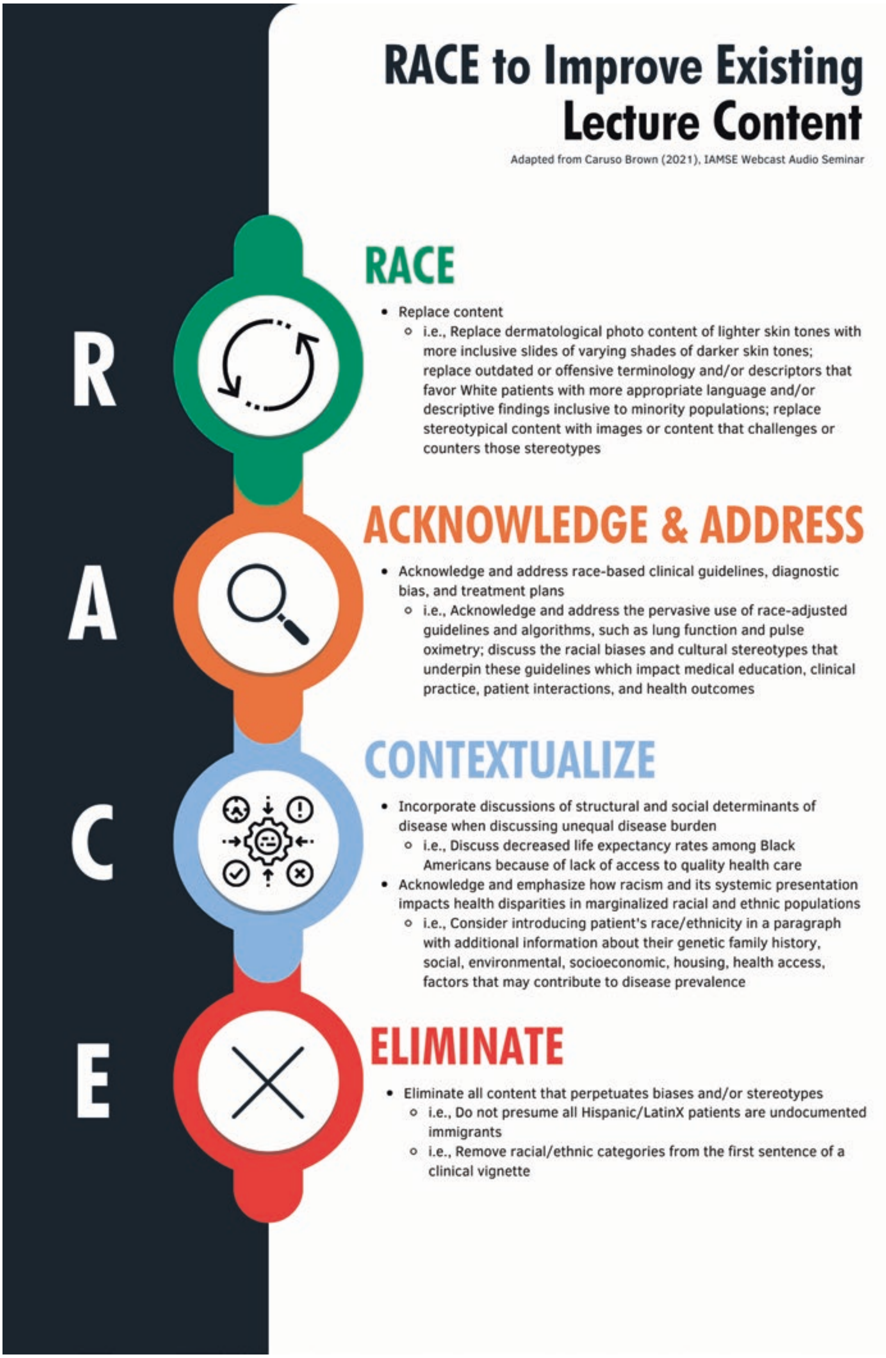
Did you acknowledge to students that the specific racial and ethnic health disparity is not based on biological factors but rather on systemic racism, implicit bias and/or social determinants of health?

Did you invite students to ask further questions regarding the REHD and the specific lesson after class via email and/or office hours?

Are You REHD-AWARE?

- **R** Race is a social construct
- **E** Ensure appropriate biological language that accurately represents ancestry
- **H** Historical, social, and structural determinants of health should be presented
- **D** Do not pathologize race by linking minorities with increased disease burden

- **A** Acknowledge and address race-based clinical guidelines, diagnostic bias, and treatment plans
- **W** Willingly review lecture content for over- or under-representation ensuring language and descriptive findings are inclusive to minority populations
- **A** Avoid associating racial groups with certain disease and/or using race as an epidemiological risk factor
- **R** Rewrite clinical case vignettes/assessment/examination questions that introduce race/ethnicity in the first sentence and/or use racial assumptions as diagnostic clues or shortcuts
- **E** Ensure cultural humility and include all ancestries, races, ethnicities in clinical scenarios, test assessments, lecture content photos and examples – Representation matters!



RACE to Improve Existing Lecture Content

Adapted from Caruso Brown (2021), IAMSE Webcast Audio Seminar

RACE

- Replace content
  - i.e., Replace dermatological photo content of lighter skin tones with more inclusive slides of varying shades of darker skin tones; replace outdated or offensive terminology and/or descriptors that favor White patients with more appropriate language and/or descriptive findings inclusive to minority populations; replace stereotypical content with images or content that challenges or counters those stereotypes

ACKNOWLEDGE & ADDRESS

- Acknowledge and address race-based clinical guidelines, diagnostic bias, and treatment plans
  - i.e., Acknowledge and address the pervasive use of race-adjusted guidelines and algorithms, such as lung function and pulse oximetry; discuss the racial biases and cultural stereotypes that underpin these guidelines which impact medical education, clinical practice, patient interactions, and health outcomes

CONTEXTUALIZE

- Incorporate discussions of structural and social determinants of disease when discussing unequal disease burden
  - i.e., Discuss decreased life expectancy rates among Black Americans because of lack of access to quality health care
- Acknowledge and emphasize how racism and its systemic presentation impacts health disparities in marginalized racial and ethnic populations
  - i.e., Consider introducing patient's race/ethnicity in a paragraph with additional information about their genetic family history, social, environmental, socioeconomic, housing, health access, factors that may contribute to disease prevalence

ELIMINATE

- Eliminate all content that perpetuates biases and/or stereotypes
  - i.e., Do not presume all Hispanic/LatinX patients are undocumented immigrants
  - i.e., Remove racial/ethnic categories from the first sentence of a clinical vignette

PRACTICES & STRATEGIES

FOR CURRICULUM MANAGERS

CURRICULUM

1) Integrate DEI topics.
2) Ensure race is presented as a social construct.

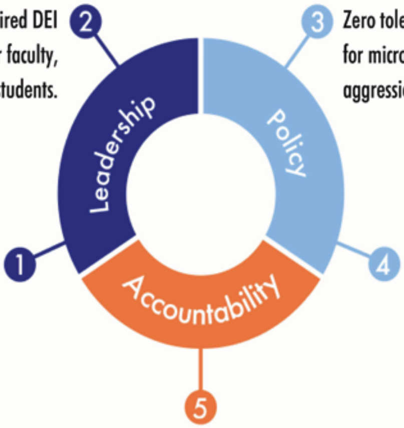
FEEDBACK

3) Course assessments for continuous improvement.
4) Climate survey.

FACULTY DEVELOPMENT

5) Training on implicit bias, cross-cultural communication, and other DEI topics.
6) Recognition.

PRACTICES & STRATEGIES FOR INSTITUTIONS



2 Required DEI training for faculty, staff, and students.

3 Zero tolerance programs for micro and macro aggressions.

1 Hiring and retaining a diverse workforce.

4 Annual assessments addressing gaps/disparities and areas of improvement.

5 Accountability from all staff, faculty, and administration.

CHECKLIST FOR HIRING AND RETAINING A DIVERSE COMMUNITY

- Make diversity a priority ✓
- Implement inclusive recruitment ✓
- Invest in success ✓
- Perform regular assessments ✓
- Hold the institution responsible ✓

Chapter 1
An Introductory Framework for Acknowledging and Addressing Racial and Ethnic Health Disparities in Medical Education

Emilie Mathura, Kristoff Aragon, and Nicole Phan

1.1 Introduction

This manual was written by a collaboration of students and faculty who are passionate about addressing racial and ethnic health disparities (REHD) in the classroom. We believe the pre-clerkship classroom is an extremely formative place for budding healthcare providers as their foundational understanding of medical knowledge is being formed. While we acknowledge that REHD are systemic problems that require systemic solutions and will not be solved in the classroom alone, we assert that pre-clerkship educators have a unique capability and responsibility to address these issues. This responsibility comes from their influence on students and their role in introducing students to the pathologies through which these disparities present themselves in the population.

For clarity, it is important to differentiate between undergraduate medical education (UME) and graduate medical education (GME). This manual was written by a team located in the United States where medical students generally complete a four-year bachelor's degree before matriculating into medical schools. Medical school lasts four years and often comprises a pre-clerkship (preclinical) portion and a clerkship (clinical) portion. The pre-clerkship portion generally consists of foundational basic science courses in the context of clinical science and the practice of medicine. In contrast, the clerkship portion is comprised of clinical rotations where students work directly under physicians in patient care settings to experience hands-on training.

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UME is the entire four-year period students spend in medical school. It typically begins with a year or more of pre-clerkship training in the biomedical sciences followed by instruction in the clerkship setting for the remaining years. After the fourth year of medical school, students receive their diploma (Medical Doctorate, M.D., or Doctor of Osteopathic Medicine, D.O.) and then match into a residency training program where they receive training specific to their specialty of choice. This graduate part of the education process is known as GME. This manual is written mostly for those teaching in the pre-clerkship portion of UME. However, the techniques described in this manual could be adapted for GME, other medical education curricula, and basic science pedagogy.

In the past few years, there has been a global shift toward addressing **racism** in all its forms. Due to the racist history experienced in various countries, systems are still struggling to break free of the racist foundations upon which they were built. Medical education is no exception. Pre-clerkship years lay the scientific foundation for clinical medicine, while a fundamental understanding of the medical profession and its interaction with other institutions is formed. Groundwork for actions that will widen or narrow the gaps in health disparities, health equity, and the social determinants of health begin in the pre-clerkship didactic classroom. This manual aims to provide guidance for the educators, administrators, students, and all others involved in teaching and learning in those areas of medical education.

The identification of dermatological conditions demonstrates a proposed theory on how REHD could be affected by the pre-clerkship classroom. Students who only see photos of dermatologic conditions on White skin will understandably become better at identifying them on White skin. When the majority of medical schools in a country teaches dermatological conditions in such a way, a workforce of physicians with a skill gap, when it comes to identifying dermatological conditions in different skin colors, is created. On a population level, that skill gap becomes an inequity in detecting and diagnosing skin conditions on darker skin tones, creating a health difference between groups and ultimately a **health disparity** that becomes a measurable difference in outcomes on the basis of race [1].

Throughout this manual, examples of this mechanism playing out in real time will be described. There is no neutral position in this work. Pre-clerkship educators are either exacerbating or diminishing REHD based on their pedagogical methods and priorities. This manual offers a guide for understanding REHD. It gives step-by-step advice on how to acknowledge and address REHD in medical education to build a more equitable healthcare provider workforce.

Finally, as will be demonstrated throughout this manual, it is important to recognize that the movement toward racial equity in healthcare is a cause we all must embrace, regardless of our race. While this work is often led by Black and Brown people who have been most affected by **racism** across the globe, **racism** affects us all. No matter how one identifies racially, those who work in medical education or are receiving medical education, have incredible power to determine the future of REHD. If you identify as White and work in medical education, your privilege is greater and therefore so is your responsibility. We implore you to use your power to create change, reduce inequities, and inspire future leaders for racial justice in medicine. It will take all of us, of every race and ethnicity, to change a system and a world that has been broken. This is not easy work but no matter who you are, this work and this manual are for you. We welcome you to join us in the journey toward racial equity in medical education.

1.2 Race as a Social Construct

Race is defined as “a social category constructed by socioeconomic and political forces that determine its content and importance.” [2] The misconception that race is rooted in biological differences between groups of people has been discredited and is being slowly dismantled [3, 4]. It has been established that race does not fully capture “global human genetic diversity” because there is “more genetic diversity within racial groups than between racial groups” making it an inappropriate category for biological comparison between people [3]. The differences between groups of people that are biologically relevant are differences in **ancestry**, which refers to one’s genetic lineage and history [5]. **Ancestry**, unlike race, has more to do with family history than it does with skin color [5]. Therefore, race is as good a biological distinguisher as other arbitrary phenotypic differences such as eye color and, something that we argue, must be taught in the social and political context from which it was born, rather than in a biological one.

Two terms that tend to be conflated with **race** are **ethnicity** and **nationality**. **Ethnicity** is defined as, “a large group of people with a shared culture, language, history, [or] set of traditions” and **nationality** refers to citizenship of a particular country. Neither of these groupings are inherently biological, their use in informing medical practice is less informative and more harmful as their use in medicine reinforces their social and political hierarchical organization of social groups.

1.3 The Capitalization of Race in This Text

There is no doubt that in the context of **cultural humility,** language, the words we use, and how we choose to use them, are significant. The authors thought deeply about how each race would be best represented in this text and decided that all races should be capitalized.

Specifically, the group deliberated on whether “white” in reference to the race should be written with a capital *W* or a lowercase *w*. There was much discussion on this topic and although the authors were not unanimous, they decided to capitalize White throughout this book. They do this to signify that White, if it were lowercased, may make Whiteness seem like the expected norm [6, 7]. It may also unwittingly diminish the feeling of responsibility for White people to move this world, in which Whiteness is prioritized, toward racial equity [6]. The authors concluded that the capitalization of White reminds us of how much Whiteness and White supremacy affect all of us and how their legacy of harm toward people of color continues to bleed from the past into the present day, especially in the case of REHD [6, 7].

1.4 How to Use This Manual

In the following five chapters, we define **health disparity**, explore the importance of addressing REHD in the pre-clerkship classroom, provide best practices and strategies for acknowledging and addressing REHD in educational materials, and offer solutions for creating institutional change within medical education.

This manual is comprised of the following seven chapters:

1.5 Executive Summary

Chapter 1: An Introductory Framework for Acknowledging and Addressing Racial and Ethnic Health Disparities in Medical Education.
Chapter 2: What are Health Disparities?
Chapter 3: The State of Current Integration of Race and Ethnicity in Medical Education.
Chapter 4: Cultural Humility: An Approach to Mitigate the Challenges of Teaching About Race and Racism.
Chapter 5: Best Practices and Strategies for Medical Educators to Acknowledge and Address REHD in Educational Materials.
Chapter 6: Acknowledging and Addressing REHD in Medical Education: Best Practices and Strategies for Curriculum Managers and Institutions.
Chapter 7: Charting the Path Toward Health Equity by Acknowledging and Addressing REHD in Medical Education.

1.6 Addendum: Glossary of Terms

For anyone new to REHD and diversity, equity and inclusion (DEI) work, especially in the context of medicine and medical education, we recommend reading the chapters in order. The historical and social context offered in the earlier chapters will provide an important foundation on which the recommendations offered in Chaps. 4, 5, and 6 are built. As the manual is read, we recommend using the glossary of terms to address commonly used but poorly understood words and concepts related to DEI and REHD. This offers a holistic understanding that will help equip the reader to make a change in their institution. It will provide knowledge to those who may not feel adequately informed, practical strategies for those who do not know where to start, and guidance for those who have the power to create change but are not sure what to do.

For those short on time or previously educated on these topics, you will find the practical solutions and how to use them in Chaps. 4, 5, and 6. The remainder of this chapter will provide a more in-depth summary of the subsequent chapters and the content covered in each. Finally, for a quick overview of everything in this manual along with the practical tools and checklists we have created and compiled, please see the executive summary located before the start of Chap. 1.

1.7 Who Is This Manual for?

This manual was written with the intention to communicate the importance of understanding and teaching REHD to developing healthcare professionals in the pre-clerkship years of UME. Thus, the intended audience is primarily those teaching in health professional educational programs. However, this manual could be of use to anyone who interacts with medical education, and beyond which includes but is not limited to medical school administration officials, medical school staff members, university administration offering premedical education, and students at every level of medical education. This manual is comprehensive enough for those in leadership while also accessible to those in all roles related to medical education.

This manual was intended to be both a beginning point for those who are new to REHD as well as a detailed look to deepen understanding and offer practical tips for those who are further along in their knowledge.

1.8 Defining Key Terms

As seen in the sections above, there are bolded words throughout this text which are defined in the glossary in the back of the manual. These words were chosen carefully and defined to provide context to readers at all levels in their journey towards racial equity in medical education.

Before moving forward, there are five terms that should be discussed to create a common understanding between the reader and the authors. Here we will define **racism, diversity, inclusivity, equity, and equality.**

Racism is defined as “beliefs, attitudes, institutional arrangements, and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic group affiliation [8, 9].” Throughout this manual, the concept of **racism** will be explored in different contexts such as **structural racism, systematic racism**, and medical **racism**. However, at its root, **racism** comes down to differential treatment of one group; the difference between these terms is the scale and setting at which this occurs.

The next set of terms to be defined is **diversity** and **inclusivity**. Two buzzwords among chief executives and marketing teams, the concepts of diversity and inclusion have been brought to the forefront of the minds of many in recent years. Despite the ubiquity of their use, it is rare to see diversity and inclusion being executed in alignment with their true definitions. Before recent times, the term "diversity" was used in higher education to refer to the racial and ethnic diversity that universities were striving for in order to diversify thought on their campuses [9]. In this manual, the term diversity will be focused on race and ethnicity. However, for our purposes, **diversity** is defined as representation in a specified setting of as many groups as exists in the general population, specifically minoritized populations. On the contrary, while **diversity** is the mere presence of minoritized peoples, **inclusivity** is the practice of including and providing equal access and opportunities to people who would otherwise be excluded or marginalized.

Equity and **equality** are two terms that are commonly confused due to their shared root with overlapping meanings [10]. While their shared root means "equal" and "even", the use of one term over the other can drastically alter the process and outcome of proposed plans [10, 11]. **Equity** refers to the justice that is achieved through providing the necessary opportunities and resources to reach an equal outcome by recognizing the differences in circumstances each individual and community faces [11]. This may mean providing an unequal distribution of resources at the beginning to achieve an equal outcome. **Equality**, in contrast, is the sameness of amount where the same extent of resources is provided to everyone at the beginning, regardless of circumstances, without necessarily achieving an equal outcome [11]. While **equity** and **equality** have characteristics of fairness in some sense, the misuse of these terms can greatly influence the outcome of marginalized communities.

1.9 What Are Health Disparities?

Health disparities, which are differences in health due to variations in many factors including, but not limited to, social, economic, and environmental, are covered in depth in Chap. 2. Medical educators and institutions have an important role in shaping how budding healthcare providers interact with and care for patients. By having an understanding and ability to define terms such as **health disparity**, **health inequity**, and **health inequality**, medical programs should be able to integrate these discussions into the curricula to improve upon inclusive, equitable, and ethical care. As an important caution, care needs to be taken when discussing health disparities, especially without context, due to potentially pathologizing race, dismissing experiences, and disregarding nuances between bi-racial and multi-racial individuals [12, 13].

Improving awareness of racial and ethnic inequities within the medical profession and within the general public can greatly reduce current disparities. **Racial and ethnic health disparities (REHD)** are adverse differences in health affecting individuals who are systematically faced with greater barriers to adequate care due to their racial or ethnic group [14]. While **health inequalities** are unavoidable, measurable differences in health that vary across individuals or groups [15]; **health inequity** is defined as avoidable, systemic differences in health status or distribution of resources between groups of the same social conditions such as where they were born, raised, live, work, and their age [15]. **Social determinants of health (SDOH)**, such as socioeconomic status (SES), geographic location, and accessibility to resources, to name a few, are important to incorporate in discussions of **health inequity** because of the role these differences between groups play in determining health outcomes [10]. The variation in SDOH across groups can have a domino effect, demonstrating differences in health conditions and mortality. For example, lack of access to nutritional foods, due to both systemic as well as individual barriers, can increase the risk of developing health conditions that can ultimately decrease an individual's life expectancy [16]. If the source of these health inequities is addressed, steps towards health **equity** can be achieved.

Even when health inequities are addressed, historical experiences still contribute to and impact health inequalities. It is important to take a step back and examine how each aspect of the whole comes into play and interacts with each other. There is no one correct formula to solve these issues; it takes continual reevaluation to progress towards health **equity.** Further discussion on health disparities and additional key terms that contribute to health disparities can be found in Chap. 2 along with various examples of contextualization of racial and ethnic health disparities worldwide.

1.10 Why Address REHD in the Classroom?

Chapter 3 explores the state of current integration of race in medical education. Many medical schools still teach that race is a risk factor despite the evidence suggesting that it is not race that is the risk factor but rather **racism**. The issue lies not in teaching the REHD but in how the REHD is discussed in the classroom. The historical context of **structural racism** and oppression against some groups over others is imperative to helping students confront **biases** that they may bring with them to medical school based on their experiences or lack thereof. By not only failing to address REHD in their social context but also failing to help students challenge their own **biases,** preclinical educators are not sufficiently educating their students to consistently apply inclusive, bias-free medical practices.

Implicit bias, which are unconscious beliefs that guide individual decisions and actions, play a significant role in upholding stereotypes that lead to differential treatment culminating in REHD [17]. Medical students and providers are not impervious to implicit **bias**; everyone holds implicit **biases**. An example of implicit **bias** in medical providers includes physicians being more likely to underestimate pain in their Black patients than their non-Black patients [18]. Another example of this is that medical providers still hold untrue beliefs about biological differences between Black and White people, such as that Black people have thicker skin or less sensitive nerve endings [18]. However, there are examples of successful interventions for mitigating **bias**, including educational materials and conscious effort. Even more, fortunately, successful **bias** mitigation has led to increased patient satisfaction [12–14].

Implicit **bias** in medical education may affect minority students through the negative impacts of macroaggressions, **microaggressions**, and outright differential treatment thereby widening the academic performance gap [19]. Racial **microaggressions** refer to "subtle insults (verbal, non-verbal, and/or visual) directed toward people of color, often automatically or unconsciously [20]." Contrasted to **macroaggressions**, which are intentional and directed towards whole groups of marginalized people [21]. These **microaggressions** can create an environment of stress, anxiety, and frustration, negatively impacting learning, academic performance, and well-being of students. It is essential to create an environment for underrepresented students to thrive, thus leading to a health care system that maintains a workforce that is inclusive and equitable in representation reflecting their constituent communities [22]. Factors that can achieve a shift towards greater diversity, **equity**, and inclusion include culture change, listening to learners, and **bias**-free assessment and evaluation at all levels of medical education.

Most medical training is currently race-based, which fails students, leaving them unable to recognize REHDs and accurately correct them in their developing medical practice. The race-based approach to medical education may also lead future healthcare providers to assume that differential health outcomes between races are due to reasons other than systematic **racism**, which could reinforce false beliefs and **bias**es in providers. It is proposed that a race-conscious approach would better benefit students and their future patients by focusing on the cause and effect of health disparities, leading to a more holistic understanding of their patients. For a more extensive discussion on this topic, please refer to Chap. 3.

1.11 Cultural Humility

Cultural competency has been proposed as a remedy to REHD by many institutions and educators around the world. Cultural competency has been defined in health care by Betancourt et al. as "understanding the importance of social and cultural influences on patients' health beliefs and behaviors; [and] considering how these factors interact at multiple levels of the health care delivery system…" [23]. Tervalon and Murray-García evolved the concept of **cultural competency** by introducing the concept of **cultural humility**, which "incorporates a lifelong commitment to self-evaluation and critique, redressing the power imbalances in the physician-patient dynamic, and developing mutually beneficial and non-paternalistic partnerships with communities [24]."

SDOH continue to be discussed as causes of unequal disease burden; however, without fully addressing the root cause of a problem or discussing the role **racism** plays in these disparities, learners will continue throughout their education with their stereotypes and implicit **biases** [25]. Addressing REHD requires continual re-evaluations to better adapt to these dynamic issues, and one way to do that is by breaking the traditional classroom roles and procedures in order to have critical, in-depth discussions about race, **racism**, and racial justice [26]. With the change in classroom dynamics, educators will need to learn how to find a balance of control within the discussion for the sake of safety and **inclusivity** of students while allowing the discussion to organically direct itself [26]. During this discussion, it is also important for educators to consider the different identities of students, which can be categorized as master, interactional, and personal [26]. These categories are further defined in Chap. 4.

Challenges of incorporating **cultural humility** both individually and within the classroom may include but are not limited to misconceptions, **bias**, race being seen as a biological construct, and **White fragility** [23, 27]. **White fragility** is when any amount of trigger of racial stress for White people causes a range of emotional and behavioral reactions to combat the internal challenge of being seen as immoral individuals connected to **racism** [28]. Critical and necessary discussions on race and **racism** may be hindered by **White fragilit**y through acts of **microaggressions** or even overt **racism** [27]. Many of the challenges are centered around the vulnerability of both the educator and students and, within an explorative article by Geschier, vulnerability was found to be a crucial point in the development of understanding of discussions [29].

Cultural humility is a lifelong learning process of continual self-reflection aimed at improving the respect for and quality of interactions with diverse communities, similar to the lifelong learning process healthcare professionals and those dedicated to educating healthcare professionals undertake [24]. Deeper discussions on **cultural humility** vs. **cultural competency,** the challenges of teaching about **race** and **racism**, and examples of approaches can be found in Chap. 4.

1.12 Addressing REHD in the Classroom and Institution for Health Sciences Education

Race is a social construct; however, it is still continually associated with biological differences [30]. In order to adequately implement and discuss topics in curricula with regards to the differences of individuals, a fundamental understanding of terminologies, including **race, ethnicity**, and **ancestry,** must be established [12]. Although these terms may be interrelated, only **ancestry** truly gives insight of genetic variation that may affect disease outcome and medication efficacy [31]. Understanding the words **race, ethnicity**, and **ancestry** leads educators to use more intentional and specific descriptors that better encompass differences and predisposition to disease among individuals based on their ancestral backgrounds, regardless of their socially constructed **race** [12]. This intentional use of more defining descriptors also relates to the classroom by working to include a historical and systemic context to disease burden within learning materials to mitigate the portrayal of misguided information [32].

A holistic approach needs to be taken when formulating lectures and implementing policies throughout educational institutions because while culture and genetics influences burden of disease, so do environmental, psychosocial, and behavioral factors [30]. Considering some factors while ignoring others leads to misinformed clinical care, which in turn, fails to solve the underlying cause of the disease [33]. Content should be created that integrates and promotes **diversity, equity**, and **inclusion** while also challenging the varying **biases** and stereotypes potentially held by students [34]. Curriculum managers at the institutional level should receive the feedback from course assessments and continually improve the curriculum, taking in the thoughts of students as well as the current climate to further faculty development regarding implicit **bias**, cross-cultural communication, and other DEI topics. There is no one right or wrong way to do this and it may require multiple rounds of evaluation and reorganization. There may also be benefits from the use of a combination of instructional environments such as, but not limited to, standardized patients, didactics, and small group discussions. The overall goal is for students to be able to recognize and address REHD throughout their medical education and beyond.

Educators, curriculum managers, and the institution all have a role in creating and maintaining a culture of **inclusivity** for faculty, staff, and students. With such an integral role in shaping the next generations of health care professionals, the use of specific descriptors of **ancestry** to better encompass genetic differences and contextualization of **race** and **racism** in medicine within lecture materials could greatly elevate the student understanding and, ultimately, the quality of equitable care received by patients [12]. More in-depth discussions on acknowledging and addressing REHD in educational materials and best practices and strategies for curriculum managers and institutions can be found in Chaps. 5 and 6, respectively.

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Chapter 2
What Are Health Disparities?

Sunhee Danielle Jung, Kristoff Aragon, and Yuri Kamihagi Anderson

2.1 Introduction

Medical institutions and educators are uniquely positioned to provide students with the understanding, contextualization, and skills to confront issues such as racial and ethnic disparities that drive health inequity [1]. This chapter aims to deliver contextualized summaries of key terms that can differentiate one's understanding of health disparity, inequality, and inequity. Transforming healthcare into a more inclusive, equitable, and ethical practice requires an evolution in medical curricula that reflects the social and multifaceted realities in the relationships between health, race, and ethnicity. This endeavor also necessitates the dedication and ability to continuously confront and address systemic and institutionalized prejudices and policies.

The ability to define health disparities and health inequities will provide students with the foundational terms used across medical, social, and political discourse. This in turn may facilitate their critical application of these terms in not only region-specific but also in universal health contexts that consider the cultural, historical, and sociopolitical variation across nations. It is vital to consider definitions because of the ways the terms **health disparities** and **health inequities** are used, valued, and understood. The concepts encapsulated by these terms have central roles across vast disciplines such as health training, resource allocation, planning, and health promotion [2].

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2.2 Defining Health Disparity and Health Inequity

The terms **health disparity** and **health inequity** have become conventional in social science and public health spheres. These terms are often used to inform health policy and guide research that mobilizes health infrastructure [3]. However, global communities evolve as they become more connected. With access to the internet, rapid communication, and technological advances in many societies, the capability of providing and sharing instant information has profound benefits and implications on international visibility and sociopolitical connections [4]. As it relates to healthcare, exposure of the vast health inequities disproportionately experienced by racial and ethnic minorities have taken center stage in the global arena [4]. This renewed and important focus requires prioritizing immediate action to advance health equity with considerable opportunities in medical education [1, 5].

2.2.1 Health Disparities

The term **health disparity** generally considers the *differences* in health and health outcomes between *two groups of people* in a population [6]. It is a pervasive term, primarily coined and used within the United States, which denotes an incorporated sense of injustice, often defined by differences in race, ethnicity, and/or socioeconomic status [7].

The United States Department of Health and Human Services (DHHS) Secretary's Advisory Committee (SAC) published a landmark report called *Healthy People 2020* – defining **health disparity** as "a particular type of health *difference* that is closely linked with social, economic, and/or environmental disadvantage [7, 8]." Similarly, the U.S. health protection agency: the Centers for Disease Control and Prevention (CDC), expanded upon this concept of **health disparities** to also be considered as *inequitable* and directly related to the "unequal distribution of social, political, economic and environmental resources," [9] as well as including "preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations [9]."

Typically, **health disparities** adversely affect groups of people who have "systematically experienced greater obstacles to healthcare based on their racial or ethnic group, sexual orientation, gender identity, geographic location, or other characteristics historically linked to discrimination or exclusion [8]." However, using health disparity as a direct measure of inequality without context risks reductionism and the pathologizing of race [1]. For example, presenting health disparities without context dismisses differences between first-generation and second-generation citizen experiences. Neglecting context disregards biracial and multiracial nuances, it risks "victim- blaming through constructing the non-reference group [i.e., minority populations] as the problem" while dismissing other possible complex factors [10]. Such factors include historically discriminatory programs, unequal access to resources and information, prejudiced socioeconomic planning and implementation, and/or other institutional and systemic forms of social and structural violence [1, 9]. As a result, in the United States, the US Office of Disease Prevention and Health Promotion (ODPHP) expanded upon previous definitions of health disparity to emphasize the importance of incorporating **social determinants of health (SDOH)** such as, but not limited to: socioeconomic statuses (SES), geographical locations, and sociopolitical impacts generating health disparities that affect not only one's health, but functioning, opportunity, and quality of life outcomes and risks [8].

Globally, in 2005, the World Health Organization (WHO) established a Commission on Social Determinants of Health that recommended systematically addressing poverty, sanitation, food security, and other SDOH to meet basic human needs and improve health across global populations [11]. Surveys, toolkits, and more resources have been built and allocated to help expand the effort towards changing the healthcare landscape in not only the United States, but world-wide.

For the instructional purposes of this manual, we define racial and ethnic **health disparity** as the disproportional *differences* in health and health outcomes experienced *by racial and ethnically marginalized populations* due to the historical and persistent unequal distribution of social, political, economic, and environmental resources.

2.2.2 Health Inequity and Health Inequality

Unlike the term **health disparity** which is predominately applied in a U.S. context – **health inequity** is a far more ubiquitous term, with international familiarity and usage. Although seemingly similar at first glance, it is important to differentiate health *inequality* from health *inequity*, as the two terms are not interchangeable.

The WHO, an international public health agency that aspires to shape the global health agenda and norms, defines **health inequity** *(not inequality)* as <u>avoidable</u> "*systemic* differences in the health status or in the distribution of health resources between different population groups arising from the social conditions in which people are born, grow, live, work, and age [12]." Some definitions frame **health inequity** with a moral and social discrepancy – a <u>preventable</u> unjust or unfair difference in health disparity or SDOH rather than a biological difference [13]. For example, the COVID-19 pandemic exposed substantial **health inequities** in the United States for Black, Latinx, and American Indian/Alaskan Native individuals compared to White individuals. The country's historical and institutionalized limitations on financial and educational resources for Black, Latinx, and American Indian/Alaskan Native communities were one of many factors that impacted members within these populations to more likely be employed as essential workers (e.g., grocery store employees, or employees with work that must be performed on-site, serving the public). Work duties that place employees in close proximity to the public heightened the risk of contracting the virus [13]. In contrast, many non-essential employees were afforded societal protection by being allowed to maintain their earnings while working from home in an effort to reduce the risk of exposure and, therefore, any health complications that might arise from a coronavirus infection.

Another social and structural example of **health inequity** that created an unlevel field of opportunity and access for groups of non-White people is the racially motivated housing policy of **redlining** in the United States [14, 15]. Redlining refers to the U.S. federal government housing program established in the 1930s that provided and secured housing to only White middle and lower-class families by legalizing the exclusion, racial segregation, and discrimination against Black families and other non-White communities [15]. Non-White families were denied access to suburban homes and neighborhoods; many of these non-White families were directed instead towards urban housing projects. State and local maps were physically marked with red lines to denote areas where insurance providers and mortgage lenders could legally restrict any services based on racial demographics. Housing inequity reflects the structural racism reinforced in the disinvestment in communities of color as they faced a disproportionate lack of access to employment and educational opportunities, access to quality grocery stores, transportation, and greater exposure to environmental risks [16]. Investment and loan services could be denied in these redlined areas because they were deemed predominantly Black and as a result, “hazardous” investment risks [16]. Eventually, the Fair Housing Act of 1968 was passed, which legally made redlining less acceptable; however, its legacy gave rise to massive inequitable social outcomes within redlined communities that continue to persist [16]. For instance, studies have found poorer mental health outcomes of historically redlined community members, higher prevalence of chronic injuries and exposure to environmental hazards, marked increases in the incidence of preterm deliveries, as well as premature mortality and decreased longevity [15, 16].

Health inequity can also be exemplified across multiple continents, for example, in India, there is a difference in mortality burden across the life course that falls disproportionately on historically disenfranchised lower caste groups. These communities previously experienced legal and social discrimination, which resulted in economic disadvantages and inequity impacting health status and outcomes as well as healthcare access [17, 18].

A study conducted by Arcaya and Arcaya [13] also demonstrated the widespread effects of **health inequites**. This study reported that the direct economic cost of racial and ethnic health inequities in the United States was estimated at $230 billion [13]. The economic burden was further estimated at $1.24 trillion when considering the indirect costs of inequities [13]. Taken together, these examples provide economic, ethical, and cultural perspectives that reinforce the critical need for understanding and addressing health inequities and disparities.

Health inequality refers to measurable aspects of unequal, unjust, and sometimes unavoidable differences in health that vary across individuals or groups [19]. Some health inequalities are unavoidable because not all individuals or groups have equal health statuses [20]. For example, Braveman et al., demonstrate an unequal comparison of generally faster and healthier recovery outcomes in young adults post-injury versus the relatively lesser, and poorer recovery outcomes of much older aged adults experiencing the same injury [19]. Essentially, the difference in morbidity and mortality between those in their 20th decade of life to those in their 80th decade of life is an example of health inequality – unequal outcomes, but this is not the same as inequity. Another example of inequality is the difference in the incidence of Sjögren syndrome between biological men and women. Women are 16 times more likely to obtain a diagnosis of the autoimmune disorder that is Sjögren syndrome than men. This is an example of inequality, an unequal outcome that is not systemically avoidable or socially preventable [21].

In 2011, the University Medical Center Rotterdam in the Netherlands' Public Health Department investigated the economic costs of health inequities in the European Union (EU). The report found that individuals with lower educational statuses suffered greater health complications, which the study determined accounted for 20% of the EU's total healthcare costs and for 15% of social security benefit payments. Additionally, the lost opportunity cost and loss of productivity that resulted from unmet health inequities summed to 1.4% of the Netherland's annual GDP [22]. This study, however, utilized the term "inequalities" when describing the disproportionate difference in health due to systemic and socioeconomic differences, which we have delineated in this chapter to be better defined as inequity rather than inequality. This highlights the importance of current and future discourse when collaborating academically or globally to pay close attention to the evolution of key term definitions and if they are actionable or not.

To effectively prepare medical educators to recognize and understand health disparities and inequities, we have provided pairs of cartoon illustrations that clearly demonstrate the differences between **equality** (Image 2.1) and **equity** (Image 2.2). These images may facilitate class discussions by providing a starting point that will allow students to expand into firmly understanding the difference between *in-equality* versus *in-equity.*

TRY!

Classrooms are encouraged to create their own illustrations that will reflect the context, culture, environment, and characters of their society and communities served

Image 2.1 Equality scenario in context depicts two different households quarantining during a pandemic similar to the global COVID-19 pandemic. Both households have received the ***same*** and ***equal*** resources and/or opportunities (i.e., four personal health screening kits per household). In the left picture, a single-occupant, spacious household is in a new suburban neighborhood and receives four health screening kits despite only needing one. The scenario on the right illustrates an apartment household shared between five individuals with differing health statuses and needs in an urban city that historically grew in response to redlining policies. Image Source: Aragon, Kristoff. March 31, 2022. "Equality Scenarios in Context."

Image 2.2 Equity scenarios in context depicts the same two households from Image 2.1 quarantining during a global pandemic similar to that of COVID-19. However, resources and opportunity allocation are differentiated by considering the systemic, social, economic differences and conditions that may disproportionately impact health status and outcomes (i.e., one health screening kit for the single-occupant household and five health screening kits for occupants of the apartment). Image Source: Aragon, Kristoff. March 31, 2022. "Equality Scenarios in Context."

TRY!

Take time to challenge educators and students to recognize and assess the differences that arise in each illustration. Foster critical thinking and empathy by considering the context of scenarios that impact health and its relationship with different races and diverse ethnicities (e.g., history, policy, environment, demographics, race/ethnicity, socioeconomic factors, etc.)

By demonstrating accurate utilization of important definitions such as health equality/inequality vs. health equity/inequity – medical students can then connect how individuals, communities, and systems are impacted and where actionable solutions can arise.

Understanding concepts at the individual level makes way for subsequent actionable steps. Reducing health disparities involves professional awareness and public advocacy aimed at eliminating the unjust disparities that arise from racial and ethnic inequities [23]. The Robert Wood Johnson Foundation, the largest U.S.-based philanthropy group focused solely on health, defines **health equity** as people having a *fair* and *just opportunity* to be as healthy as possible, which requires "removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness, lack of access to better working conditions with fair pay, quality education and housing, safe environments, and affordable health care [14]."

For the instructional purposes of this manual, our definition of **health inequity** emphasizes the systemic and social conditions impacting health status, healthcare distribution, access, and outcomes – which aligns with the descriptions provided by both the WHO and Robert Wood Johnson Foundation.

2.2.3 Methodology and Measuring Health Disparity and Health Inequity

Currently, there is no globally standardized or systemically accepted approach to measuring health disparities and their subsequent effects. Studies investigating REHD often depend on self-identification by respondents in surveys often limited to socially arbitrary categories. White et al., conducted a scoping review on socially assigned race in the literature across the United States, Canada, New Zealand, and Latin America as well as its connection to health outcomes. The review found that while many surveys are unable to fully capture the multidimensional nuances or contextual aspects of individual and structural lived experiences, they did provide insight and reveal patterns when comparing health outcomes by one's self-identified race and ethnicity [24]. Utilizing creative methods despite limitations have so far been the foundation of literature on REHD.

Researchers have devised specific albeit non-standardized metrics to empirically capture disparity, as related to race and ethnicity, and its outcomes. Data on the subject matter helps expose lapses in healthcare and opportunity for improvement. Data further elucidates differences in health risk factors, rates of disease progression, prognoses, healthcare access, and utilization. Methods vary according to the goals and design of each study which include quantitative, qualitative, or mixed methods approaches. Commonly, data sources are drawn from demographic information captured by national health surveys (e.g., New Zealand Health Survey, Ministry of Health surveys, National Longitudinal Study of Adolescent Health to Adults, Project on Ethnicity and Race in Latin America (PERLA)) [24]. Moreover, qualitative reports often rely on self-reported health outcomes from in-depth interviews and surveys to capture REHD. Interviews and self-reported health ratings are valuable measurements that help reflect attitudes about disease, lived experiences, perceptions, cultural nuances, differing risk factors, unequal experiences, quality, and access to care [25].

Some quantitative measurements of health disparity are often reported as pairwise comparisons between different groups of people which yield a ratio of two rates such as hazard ratios or relative risks [26]. However, as with all research efforts, critical appraisal of a study's methods helps highlight strengths and limitations. For example, by attempting to capture health disparities by using pairwise comparisons, the multifaceted and multivariate nature of these situations may be inaccurately captured or completely missed. This approach can risk being too reductionist which can be supplemented by higher-powered studies that investigate multiple relationships. Nevertheless, captured data still provides direction and can reflect differences in health utilization, health outcomes, and self-rated health statuses [24]. Another example of a quantitative metric that has been used in reports such as *Healthy People 2020* is the Index of Disparity (ID). ID is a modified coefficient of variation defined as the "average of the absolute difference between rates for specific groups within a population and the overall population rate, divided by the rate for the overall population and expressed as a percentage [26]." Healthy People 2020 employed this statistical method to inform the public on the status of health disparities and SDOH, in order to establish goals and a method to monitor and evaluate progress.

A Chilean study measured health disparities experienced by the Mapuche population via Geographic Information Systems (GIS) mapping in combination with hospital discharge records to see differences in health access, utilization, and outcomes between population groups [27]. Government agencies also tend to identify a specific disease and either follow the disease to compare the incidence rates in various geographic, racial, and SES groups, or alternatively, follow the disease in a longitudinal study. For example, the *American Journal of Epidemiology* in 2008 published a study that utilized the trends in U.S. lung cancer incidence by geographical SES position and race-ethnicity health disparities. The data indicated that measurement of longitudinal changes in health disparities is subjective to how they are measured and the authors recommend utilization of multiple indicators [28]. This can further guide investigation into a more targeted scope.

Furthermore, the government of Taiwan performed a longitudinal study to observe changes in health improvements and health disparity before and after the institution of a national health insurance system in 1995. The researchers followed these metrics over 10 years to compare "life expectancy, reductions in death from cardiovascular diseases, infectious diseases, and accidents [29]." One of their findings showed that after introducing national healthcare, there was an increase in life expectancy in the group that previously had high mortality rates from cardiovascular diseases, infections, and accidents. Systems such as these can help governments to apply these methods for targeted change towards addressing REHD. In Lebanon, a study looking at the health disparities experienced by refugees used demographics from cross-sectional surveys and logistical regressions on five measures of SES to capture inequity (e.g., educational attainment, wealth index, crowding, severe food insecurity, and water leakages in homes) [30].

Maternal near misses (MNM) is another example of racial health disparity in the U.K. as it occurs "twice as often for women of African and Afro-Caribbean descent in the U.K [31]." The WHO defines incidences of MNM as "a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy [32]." Having this clear and measured racial disparity within the U.K.'s health system led to another policy reform: establishing the United Kingdom Obstetric Surveillance System (UKOSS). UKOSS investigates MNM morbidities amongst different races. Being able to document this racial health disparity resulted in the reorganization of maternity services which successfully reduced the maternal mortality ratio for African women in the U.K. from 72/100,000 live births to 28/100,000 from 2000 to 2013 [31]. Being aware of the many diverse methods available for capturing and reporting of health disparities may not only foster a greater appreciation for this topic's complexity but also signify its urgent need for prioritization [24].

2.2.4 *Using Historical Lenses to Describe Health Disparities Around the World*

Understanding history's impact on a community, such as the history of slavery in many countries (a few select countries will be discussed in this section), has had a pervasive influence on the inequitable social conditions and public policies where disparity persists. For centuries, enslaved African individuals, who were needlessly targeted in large part by differences in physical appearance and lifestyle, were forced into slavery by White countrymen who legally oversaw the dehumanization of Black Africans. Enslaved African men, women, and children were rendered property of enslavers and subsequently denied all civil rights. These prolonged atrocities devalued and prohibited life opportunities that denied access to health care, societal functioning, and a just quality of life. As far back as the sixteenth to nineteenth centuries, countries such as Brazil (under Portuguese occupation), the United Kingdom, the United States, and the Netherlands exemplified the historical harm caused by the unjust damage resulting from the transportation and dislocation of over 12.5 million African individuals across the Atlantic Ocean [33, 34].

The trans-Atlantic slave trade was a systematically organized human-trafficking raid on African territory by European countries and the United States during the 16th to 19th centuries. For hundreds of years, African individuals were captured, imprisoned, and transported out of their continental homelands to be enslaved, mistreated, dehumanized, and traded as laborers for predominately White enslavers. At the end of the nineteenth century, social and civil reform eventually led to the end of the inhumane slave trade; however, the countries that engaged in the trans-Atlantic slave trades failed to reverse or halt the catastrophic and continual colonial brutality against the now marginalized, large groups of displaced Black people.

By the late eighteenth century, Great Britain dominated the slave trade and was transporting 40% of all trans-Atlantic enslaved people until the abolition of slavery in 1807 [33]. As time progressed, so did social change where several European countries such as present-day Great Britain and France were motivated to establish new civil laws and entered a period of political reform. During this civil revamping, the foundation of nation-sponsored universal public healthcare plans came to fruition [33]. White individuals were the prioritized racial group who mostly benefited from public services, civilian life, and societal opportunities. A century later, in 1948, the U.K.'s National Health Service (NHS) was officially established, providing universal healthcare to all U.K. citizens. Despite efforts to make healthcare accessible to all individuals, health disparities amongst different races continue to remain today. Recent NHS research found that there exists a "greater than 5-fold increased risk [of maternal mortality] for Black women [as compared to White women] in the UK [31]".

Across the Atlantic Ocean in South America, Brazil was colonized by Portugal during the fifteenth century. Portuguese colonizers exploited indigenous communities for slave labor as well as capturing and importing millions of enslaved Africans for their slave labor in sugar production, mining, and cattle ranching [34]. In Brazil, even hundreds of years post-slavery, racial discrepancies persist in part from the historical disenfranchisement of Black populations. In 1988, despite Brazil implementing universal healthcare for all citizens under *Sistema Unico de Saude,* racial health disparities did not disappear [34]. One glaring example of this is in Brazil's maternal mortality rates. Eleven years *after* universal healthcare was implemented, Black women suffered significantly higher maternal deaths at 240.4/100,000 compared to 49.3/100,000 for White women [31]. There is a great need to address and understand the different life experiences, unnecessary suffering, and loss of lives due to racial disparities. Yet again, historical context provides an important piece of the puzzle when assessing and understanding health inequities and disparities.

The United States' direct engagement in the trans-Atlantic slave trade possibly accounts for the capture, trade, and enslavement of over 305,326 individuals between the years of 1626 to 1875. According to the Slave Voyages Consortium, hundreds of thousands of individuals were displaced in the United States, captured from the African continent and Latin America, particularly Brazil [35]. Owens et al., discuss the legacy and role of physicians during this time. Historically, U.S. physicians served the interest of White enslavers and used Black bodies as "medical material" in medical schools for White men [36]. Black women were violated at an enslaver's discretion, impregnated, and expected to care for their children under violent circumstances [36]. Knowing the history that has contributed to the insidious persistence of racism, prejudices, implicit biases, and discrimination can help provide a more complete understanding of how and why disparities endure in healthcare today. From 2005 to 2014, the overall U.S. maternal mortality was 17.2/100,000. However, when observing maternal mortality statistics stratified by racial and ethnic groups, Black women had 3.6 times higher maternal mortality than White women and nearly four times higher than Asian women [31]. Native American/Alaskan Natives also had 1.7 times higher maternal mortality rate than White women and 2.4 times higher rate than Asian women [31]. MNM risks were also approximately two to five times higher in Black women than White women in the United States. It is imperative that glaring racial disparities such as these are known and acted upon by medical students, current and future providers, future field leaders, and innovators.

The historical background of the Netherlands is slightly different. Although the Dutch slave trade mainly occurred in Asia, the Netherlands was instrumental during the infancy of the Atlantic slave trade through the commercial workings of the Dutch West India Company. Here, enslaved people were "almost exclusively delivered to foreign planters and colonists [37]." In some part, for this reason, the racial composition of the Netherlands is dissimilar to that of other colonial slave-trading countries. Their racial diversity is a result of more recent immigration [38]. According to the *CIA Factbook*, the Netherlands is ethnically comprised of the majority Dutch (76.9%), with the largest minority groups being Moroccan (2.3%) and Indonesian (2.1%) [39]. Despite universal health coverage under the Dutch HealthCare Authority, racial discrimination against migrant populations continues to be rampant, causing these communities to suffer a disproportionate risk of hazards and poor health [31]. "Non-western immigrant women demonstrated a 1.3-fold risk (95% CI: 1.2-1.5) of developing a severe morbidity while Saharan African women [in the Netherlands] demonstrated a 3.5-fold (95% CI: 2.8-4.3) increased risk for severe morbidity when compared to native Dutch women [31]." Acknowledgement of these glaring racial and ethnic discrepancies has given rise to recent improvements in Dutch healthcare delivery.

The undercurrents of present-day racial prejudice, discrimination, and systemic injustices, whether explicit or implicit, continue to negatively impact the health and well-being of people of color, especially of Black communities when compared to the health experiences and outcomes of White communities [33]. Understanding health disparities by considering the historical context helps to ground a societies' experience with different races while providing a perspective on persistent deficits and inequities in health. Taking some time to investigate the roots of implicit or explicit biases that impact healthcare outcomes is a step that should not be overlooked.

2.2.5 *Modern-Day Health Disparity in the Global Sphere*

In addition to having a historical context, knowledge of current societal and structural health inequities experienced by diverse racial and ethnic communities that future medical students will serve is essential. After defining and understanding what health disparities mean, it is of equal importance to avoid inferring that race and ethnicity result in universally homogenous experiences or that such experiences are fixed and easily determined [40]. Careful consideration must be taken to avoid stereotyping and racial tropes. Moreover, as formative as historical context is to social disparities, so is acknowledging the progression of region-specific differences in the way race and ethnicity are conceptualized, described, and investigated [38].

Table 2.1. provides a snap-shot template of current and evolving contextualized examples of *internationally* region-specific REHD. The table serves as a guide in framing and presenting disparities that acknowledge the context in which race and ethnicity correlate to factors such as historical, structural, and SDOH. It illustrates how these factors drive inequitable and disproportionate differences in health outcomes, including life expectancy, the burden of disease, unequal treatment, and other risk factors. Although Table 2.1 contextualizes health disparities from a racial and ethnic perspective, it does not capture the diversity of additional and critically important disparities that may arise from differences in gender, age, religion, socioeconomic statuses, sexual orientation, and other inequities that may impact health, functionality, and lived experiences. It is imperative to understand that individuals may be subject to multiple and interconnected inequities that overlap or compound, which can change one's experiences with disadvantages and outcomes.

> Understanding intersectionality as it often applies to under- and mal-served populations will equip individuals with the ability to better comprehend, interpret, and address the interdependent social and structural systems of disadvantages across communities and, on a larger scale, across countries.

Table 2.1. attempts to employ a more holistic lens to understanding why and how REHD exist and persist in different parts of the world. Table 2.1 is in no means comprehensive or conclusive but should encourage the reader to understand the complexities necessary to fully begin understanding how to conceptualize, interpret, teach, and address REHD.

Table 2.1 International examples of contextualized racial and ethnic health disparities

Country	Racial and Ethnic Health Disparities[a]	Context Examples
Lebanon [41]	**Palestinian refugees** have higher rates of multi-morbidities in comparison to **Lebanese citizens** Palestinian refugees disproportionately experience: • ↓ functional statuses • ↑ mortality rates • ↑ need for complex health care services	**HISTORICAL**: Palestinian refugees were displaced (since 1948) and remain politically and socially marginalized. **STRUCTURAL**: This group is denied access to the Lebanese healthcare system, are ineligible for governmental social services, experience economic marginalization (employment restrictions, poor wages), live in areas of poor water quality that lack sanitation and waste management. In addition, refugees experience inadequate electricity access, uncontrolled pest infestation, crowding, and food insecurity. **SOCIAL**: This group reports social exclusion, lack of educational opportunities, exposure to recurrent episodes of violence, and xenophobic discrimination.
Australia [42–44]	**Indigenous aboriginal Australians** in comparison to **nonindigenous Australians'** experience: • ↓ life expectancies • ↓ general health • ↓ health outcomes • 5X ↑ youth suicide rate • ↑ levels of psychological distress	**HISTORICAL:** Indigenous populations were established 65,000 years before European colonization, now comprising 3.3% of the total Australian population; excluded from census until 1967 with the 'White Australia' policy ending in 1973. Additional historical government policies on land parceling and cultural genocide disproportionately targeted this group of people (i.e., forced relocation to church-run missions, removal of children, systemic custom, and language assimilation). **STRUCTURAL:** Inequitable access to hospital procedures, cancer diagnostics and treatments, kidney transplants, and coronary procedures were based on indigenous status. This status also limited access to homeownership, unequal labor, and educational opportunities. **SOCIAL:** Social disparity for this group illustrated via over-representation in substance-use disorders and incarceration demographics, low educational attainment, residence in geographically remote and rural areas, systemic prejudice and institutional racism, the legacy of colonialism, and intergenerational trauma with reports of isolation and difficulty building supported ethnic communities and social groups.

(continued)

Table 2.1 (continued)

Country	Racial and Ethnic Health Disparities[a]	Context Examples
New Zealand (NZ) [45, 46]	**Indigenous Māori** population in comparison to **European New Zealanders** have: • Substantially ↓↓ life expectancy by 8–9 years • ↑ risk for mental health disorders • ↑ incidence of cardiovascular disease	**HISTORICAL**: NZ was colonized by Europeans in the nineteenth century leading to rapid urbanization, land alienation, loss, and dispossession, leading to strategic discrimination by concentrating indigenous Māori people in the most deprived areas of the country. **STRUCTURAL:** Māori account for 15% of NZ population but more than half of Māori live in deprived areas of the country despite land being a major source of cultural and political identity. As a result, this group systemically reports lower incomes/life-time earnings and less access to housing and education. **SOCIAL:** This group experiences a legacy of colonialism and intergenerational trauma. They are 10X more likely to experience racial discrimination resulting in verbal and physical attacks, and have a higher risk for mental health disorders and substance-use disorders. Implicit bias from physicians results in Māori patients being placed on dialysis rather than the kidney transplant list and are prescribed outdated antidepressants.
Chile [27, 47]	Indigenous communities (i.e., **Mapuche people**) in comparison to **non-Mapuche** experience: • ↑↑ mortality rates across all age groups • ↑ morbidity rates in ages <5 y/o and from age range 15–44 y/o	**HISTORICAL**: Despite being the largest indigenous group in Chile, Mapuche communities were pushed into remote areas due to "conflict with colonization, globalization, and disrupted ties to land and culture." During the nineteenth century, Mapuches were subject to "civilizing missions" based on the ethnic bias that Mapuches were "brutal barbarians." **STRUCTURAL**: Mapuche people struggled under previous military dictatorship being prosecuted as terrorists and denied civil rights. The forest industry created disruptive competition from foreign interests that further displaced the population so that Mapuche people live in regions with the lowest Gini coefficient (0.58) and experience the greatest gap in income inequity. **SOCIAL**: Many Mapuche seek national liberation from the Chilean government as Chileans perpetuate prejudiced caricatures, such as people with low income, alcohol use disorder, and laziness.

(continued)

Table 2.1 (continued)

Country	Racial and Ethnic Health Disparities[a]	Context Examples
India [17, 18]	India's rigid caste system of social hierarchy creates **lower caste** groups who, in comparison with **higher castes**, experience: • ↑ excess burden of morbidity • ↑ burden of mortality • ↑ rates of hypertension • ↑ levels of disability • ↓ self-health ratings	**HISTORICAL**: The predominant religion in India is Hinduism which historically has established the social stratification of castes. Higher castes access greater privilege and mobility, whereas lower castes are sanctioned with inherited repression and limited access to resources or upward mobility. **STRUCTURAL**: The government previously reinforced different resources, infrastructure, and facility allocation based on caste-level neighborhoods. Lower caste neighborhoods see fewer medical facilities as well as less sanitation and hygiene infrastructure. **SOCIAL**: The practice of untouchability, implicit and explicit biases, and lifetime poverty further restricts healthcare, education, and social services to lower caste communities.
USA [48–54]	Other racial and ethnic groups not included in the **non-Hispanic White group** show different health experiences and outcomes such as but not limited to: • ↑↑ death rates from COVID-19 in **Black**, **Native American/ American Indian (AI) /Alaskan Native (AN)**, and **Latinx/Hispanic** communities • **Black** and **Hispanic** populations receive ↓↓ analgesia for acute pain in emergency departments • ↑↑ maternal deaths among **Black** women per 100,000 births • ↓ quality of care and outcomes in **Black**, **Asian**, and **Hispanic** adult patients with diabetes • **AI/AN** have ↓↓ life expectance (−5 yrs. compared to general population)	**HISTORICAL**: Indigenous populations of the United States, i.e., American Indians/Native Americans/Alaskan Natives, were subject to New World pathogens while historically and repeatedly being displaced, relocated, disenfranchised, and suffering periods of forced sterilization; furthermore, the enslavement of individuals of African descent and the many decades of legalized post-slavery segregation established a history of medical experimentation, distrust, inequities, and de-prioritization of Black communities (e.g. redlining). **STRUCTURAL**: Non-White racial and ethnic groups experience hardships resultant from political racialization, income disparities, limited resource allocation, environmental injustice, disproportionate incarcerations, and limited employment opportunities. Moreover, there is an inequitable ratio of non-White medical providers in concordance with population-level statistics which perpetuates inequitable racial and ethnic representation and health inequity. **SOCIAL**: Latinx and Asian populations encompass significant heterogeneity and immigration statuses which can confer language disparities as well as earlier and prolonged allostatic loads, lower incomes, and educational statuses. Media propaganda also perpetuate harmful stereotypes and limit equitable treatment or prioritization for non-White communities.

[a] **bold** typeface in Table 2.1, column 2, represents comparison populations for health disparities

2.3 Conclusion

This chapter has provided a comprehensive definition of key terms, including health disparities, health inequity, and SDOH, as they relate to the construct of race and ethnicity. By highlighting the significance of historical, structural, and social contexts, healthcare providers can feel better equipped to address health disparities in a meaningful way. Furthermore, instructors can leverage the foundational concepts, global examples, and thought exercises presented in this chapter to promote more equitable health experiences and outcomes.

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Chapter 3
The State of Current Integration of Race and Ethnicity in Medical Education

August Stuppy and Ilma Chowdhury

3.1 Introduction

Race is a human-made social and power construct. Despite a large body of evidence that refutes the validity of race as a biological construct, race is often still used as a biological risk factor when morbidities are discussed in medical education. Repeated studies have shown that the human race cannot be subdivided into biologically distinct races or ethnicities. Further studies show that the movement of populations through migration, travel, and displacement has mitigated any minimal genetic differences [1–3]. Genetic diversity is greater within races than across races, reiterating the idea that racial subgroups are not a genetic monolith for which broad generalizations will accurately portray their genetic profile [4].

3.2 Implicit Race Bias in Medical Education and Healthcare

Unfortunately, medical education often overlooks this research when approaching race and ethnicity in medicine, resulting in a deficit lens directed at those perceived by the student or healthcare professional to fit within a stereotype. At different medical schools around the world, medical students may come from a region of relative racial and ethnic homogeneity. When that is the case, the medical student's first educational exposure to particular groups of people may be in the context of their race or ethnicity as a risk factor for disease. The professor teaching the lesson may not provide additional context for why that racial or ethnic group may be at risk for

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a specific disease. For example, a student may be educated about the health disparity that exists between Palestinians in Lebanon and the native Lebanese population, but the educator may fail to provide any social context for why this disparity exists. The student may attempt to explain the health disparity, using implicit bias to generate a false reason for the perceived biological difference between races or ethnicities, subsequently forming the basis of their misunderstanding.

Additionally, medical education often fails to acknowledge social determinants of health (SDOH) such as diet, environmental exposures, and the availability of quality healthcare as causes for differing health outcomes even within the same race. For instance, although ethnically African-American and Afro-Caribbean respectively, a Black patient from Cancer Alley and a Black patient from the Caribbean island of Jamaica would both be considered Black by medical professionals without regard to their native environment. Cancer Alley is an area in Louisiana along the Mississippi River that has traditionally been the dumping ground for large amounts of carcinogens that seep into the nearby Black neighborhoods. In viewing both patients as Black without considering the differential exposure to environmental toxins, students could incorrectly perceive the increased incidence of cancer to be genetically predisposed among all Black individuals. The student progresses through their medical training with a false belief that significant genetic differences exist within and between races and/or ethnicities without any systemic correction of the implicit bias generated by their unguided, and thus flawed, reasoning. In practice, the medical student then begins to believe that race and ethnicity are an inherent risk-factor for disease, rather than a mediator for how people are systematically oppressed. Medical education is designed to teach students to incorporate the four principles of ethics into their practice of medicine: respect for autonomy, beneficence, nonmaleficence, and justice. By failing to check and challenge implicit bias, medical education ultimately compromises these ethical principles.

3.2.1 Explicit and Implicit Bias: An Overview

Bias is defined as the conscious or unconscious attitudes and stereotypes that guide how people make decisions, behave, or perceive experiences around them [5]. There are two main categories of bias: explicit bias and implicit bias. **Explicit bias** is rooted in the beholder’s conscious awareness of and belief in stereotypes and other oppressive falsehoods. Explicit bias is often actively and proudly expressed in a person’s behaviors [5]. **Implicit bias,** conversely, is when the beholder is unconscious of their own underlying attitudes and stereotypes and unaware of the impact they have on their interactions with others [5]. Implicit bias functions to help make decisions quicker and more manageable in a world where people make thousands of decisions each day. It is important to underline the fact that *every person has implicit bias*, and that people who hold negative attitudes and stereotypes that manifest through implicit bias are often unaware of how it affects their decision-making. Implicit bias can take the form of something relatively benign. A person may have an implicit bias that every person from a specific state or country is a terrible car driver. Implicit bias can also take the form of something more malignant. A person may have an implicit bias that people of a particular race or ethnicity are less likely to adhere to medical recommendations, and therefore expect noncompliance from the patient based solely on their race or ethnicity. Medical professionals make thousands of small decisions each day that have a large impact on the health outcomes of their patients, and implicit bias can dictate how these decisions are made. Additionally, the cognitive load and stress under which medical providers are constantly operating also foster reliance on "gut feelings," which often allows implicit bias to dictate a clinician's decisions freely. The question, then, is which implicit biases should medical education strive to mitigate to maximize positive outcomes for their patients?

3.3 Implicit Bias: From Classroom to Clinic

In medicine, implicit race bias functions by creating an alarmingly large number of unfounded beliefs held by healthcare professionals, medical students, and residents that support the idea that race is a reliable factor in the health and medical treatment of a person [6, 7]. In a study performed by Staton et al. at the University of Tennessee, pain was found to be systemically underestimated by physicians. The study found that 47% of physicians underestimated the pain felt by their Black patients by more than 2 points on an 11-point pain scale, with 33.5% of physicians underestimating the pain of non-Black patients. The findings in this study can be linked to the centuries-old racist belief that Black people experience less pain than other races, which was used to justify many inhumane practices during the time of slavery in the United States [8–10]. If a healthcare provider did not train at an institution in which this apparent disparity in pain management is openly discussed, it would not be reasonable to expect them to be aware of this implicit bias toward pain management.

Another study built upon this research found several additional racist beliefs held by medical students and residents. In the study performed by Hoffman et al. at the University of Virginia, researchers demonstrated that White laypeople, medical students, and resident physicians believed that a Black person's body is biologically different from a White person's body [7]. The study was broken into two parts. First, they asked non-medical participants to rate the pain of Black and White people. Researchers then asked participants whether they endorsed beliefs about the biological differences between Black people and White people, responding on a Likert scale (1 = definitely untrue, 2 = probably untrue, 3 = possibly untrue, 4 = possibly true, 5 = probably true, 6 = definitely true). Such beliefs included "Blacks age more slowly than Whites", "Blacks' skin is thicker than Whites'," and "Blacks' nerve endings are less sensitive than Whites'." Results of this first part of the study showed that pain ratings were consistently rated lower for Black patients when compared to White patients. As high as 58% of respondents endorsed at least one of the false belief items as possibly, probably, or definitely true depending on which false belief they were prompted about. Participants who rated Black pain lower correlated with endorsing more beliefs about biologic differences between Black and White people. Importantly, the participants who endorsed fewer false beliefs showed no difference in pain estimates between Black and White patients, which suggests that appropriately addressing and mitigating false beliefs about biological differences between races, especially in medical school but also in earlier educational contexts, may represent a solution for preventing inaccurate and unequal pain assessments between patients of different races. In the second part of the study, the first assessment was repeated with a sampling of medical students and residents (n = 222). As high as 83% of those sampled reported at least one of the false belief items as possibly, probably, or definitely true depending on which false belief they were prompted about. The results from the general population were mirrored by those from the medical students and residents, in that greater acceptance of false beliefs correlated with greater discrepancy in pain estimates between Black and White patients. Additionally, participants in part two of the study who endorsed more false beliefs about race also demonstrated racial bias in the accuracy of their treatment recommendations for pain, revealing that racial bias in pain estimation and racial bias in accuracy of treatment were positively correlated. A meta-analysis and systematic review of data from 763 articles demonstrated that the findings in the above studies were reflected in the acute management of pain in emergency departments across the United States [11]. This meta-analysis found that the use of analgesics for pain is significantly affected by race, with Black and Hispanic patients being significantly less likely to receive appropriate pain management relative to White patients.

These findings demonstrate a correlation between implicit racial bias and racial bias in the accuracy of treatment for pain. The result that participants who endorse fewer false beliefs between the races show no disparity in pain estimates between the races is critical to the purpose of this manual. Suppose students who are aware of the false beliefs about racial differences show less racial bias in treatment. In that case, it could be inferred that some health disparities resulting from provider estimation could be mitigated by race-conscious education in medical training. This research underlines the importance of education about implicit bias in medicine toward mitigating health disparities, where disparities in patient care can be readily resolved through direct acknowledgement by medical educators in the classroom.

Implicit bias toward race, ethnicity, and even gender can be overridden with conscious effort. This goal has been achieved with remarkable success in several contexts within the medical field. For example, many medical schools have revamped their application and admission processes to mitigate the impact of implicit bias. Through conscious effort, program overhaul, and training, cases of implicit bias during medical school interview and application review have been mitigated, allowing for one of the nation's most diverse medical school classes to be created [12]. In addition, educational intervention has been shown to reduce gender leadership bias in academic medicine and the field of plastic surgery [13, 14]. Implicit bias mitigation has even been shown to increase patient satisfaction during encounters with medical professionals [15]. These data together demonstrate a few of the many ways in which mitigating implicit bias can positively affect the medical field and all its stakeholders in a variety of ways, from medical school admission to clinical interactions. Additional examples of evidence-based processes and guidelines that promote the mitigation of implicit bias and checklists to facilitate the implementation of race-conscious medicine are provided in Chap. 5 of this manual.

3.3.1 Race-Based Vs. Race-Conscious

People of many nationalities have crafted narratives touting inherent differences across racial lines for centuries [16]. People from European countries and the United States have constructed the belief that the White race has a divine right to rule over people with darker skin tones, using the story of the Curse of Cain as evidence for their inferiority [17]. In the Bible, Cain becomes forever marked by God after killing his brother Abel, which was a story used to explain Black skin and justify the enslavement of Black people. These same countries specifically designed scientific articles that justified slavery and colonialism through racist assessments and even created an entire pseudoscience called phrenology, which was used to judge the skulls of Black people as displaying inherently inferior shape and contour, and thereby intelligence, when compared to White skulls [17]. During the 19th and 20th centuries, a well-supported eugenics movement curated a large following in the western world [18]. An English polymath named Francis Galton originally invented the term, and he frequently advocated that Black people were inferior and that their inferiority was a reason to justify their extinction. This eugenics movement persists today, and its followers strive to explain the apparent differences in social, economic, and health outcomes between the races with false beliefs in actual biological differences between different races rather than by systemic oppression. In the United States today, laissez-faire racism predominates in economics and medicine, where, after centuries of racist policy implementation and systemization, people with darker skin are assumed to have become impoverished and imprisoned at higher rates by forces either unknown or self-inflicted [19]. The term for this phenomenon is late-stage egalitarianism, where after centuries of the dominating group crafting and sealing a system in which only they can prosper, previously dominated groups are expected to have the ability to simply rise through that purposefully crafted oppressive system. This system is mirrored for ethnic groups as well. For example, Palestinians, displaced in the Palestine war of the 1940s, became refugees in many Arab states, such as Lebanon, where they have since been marginalized in Lebanese society [20]. A common sentiment in Lebanese culture is that Palestinian refugees are lazy and unmotivated, based on the fact that the unemployment rate is approaching 70% [21]. Not captured by this statistic is the oppression facing Palestinian refugees by the Lebanese policies that makes prosperity nearly impossible. Healthcare, government-run social services, and employment restrictions based on their Palestinian ethnicity make it effectively impossible to exit the refugee camps. This compounded with a lack of proper waste management, inadequate access to electricity, pest infestation, and food insecurity make it difficult to attain economic mobility within Lebanese Palestinian refugee camps due to the cost of sickness or other factors [20, 21]. This sentiment can be generalized to how many populations who have been historically marginalized are seen by people when presented with a race and ethnic disparity without the context to qualify why the disparity exists. The majority population considers the disparity to be innate to the marginalized group rather than a result of a system built to marginalize the group specifically.

In the medical training environment, this kind of sentiment is reflected in a race-based curriculum. Curriculums that are **race-based** focus on teaching medical trainees that health disparities exist between races and ethnicities. Medical professionals should instead adjust their practice of medicine to compensate for those differences. This approach fails on several counts to train healthcare professionals who are equipped to recognize why the disparities exist and actively correct the disparities based on their understanding of how they came to be. A race-based curriculum may lead future health professionals to believe that these disparities exist for reasons not linked to the systematic oppression of entire populations. How race-based medicine impacts how medical care is distributed is far-reaching and disproportionately beneficial to White patients. For example, the American Heart Association's Heart Failure Risk Score adds three points for not being Black, meaning more non-Black patients are positively screened for intervention for heart failure [22]. Within the year 2021, the estimated glomerular filtration rate (eGFR) was changed from approximating a higher, thus more healthy, eGFR for self-identified Black patients, meaning more non-Black patients were positively screened for intervention for kidney failure [23]. This only recent change highlights the ways in which we need to critically reflect on how all current clinical tools are affecting racial and ethnic disparities. Similar differences in how healthcare is managed using a race-based model can be found in vaginal births, kidney stones, and kidney transplants, which are discussed further in Chap. 5 of this manual [24–27]. In addition, by depriving students of the *why* behind particular disparities in healthcare, students progress in their education, lacking the knowledge and ability to challenge the racialization of healthcare when they encounter it in clinics and hospitals. Without the context in which these health disparities evolved and continue existing, students cannot fully advocate for their patients in a way that mitigates the engrained patterns propagated by established health professionals. Thus, students who are taught under a race-based curriculum become propagators of racialized healthcare in an unchallenged system.

Medical training that is **race-conscious**, on the other hand, focuses on the cause and effect of existing health disparities among races and ethnicities. For example, when addressing the disparity of hypertension being more prevalent in Black populations, the professor may qualify that fact with ways in which Black populations have historically been denied adequate healthcare, actively harmed by the health system promoting avoidance, or systemically targeted and oppressed to have over ten times less wealth than an average White household thereby creating economic barriers to care. This approach, which educates students about disparities in the context of why they occur, equips future medical professionals with a more comprehensive knowledge that allows them to more effectively implement corrective policies and behaviors that address the actual causes of racial and ethnic health disparities (REHD). Further, they have a broader understanding of real potential experiences of their future patients – both within and outside the clinical setting.

Using race in the absence of social and historical contextualization, implicit bias can lead students and physicians to inaccurate conclusions. A physician located in the state of Louisiana may notice that Black adults and children are diagnosed with cancer 50% more often than White adults and children [28]. Implicit bias would readily attribute this discrepancy in cancer risk to race or culture, but implicit bias would fail to recognize that the increase in cancer incidence is directly correlated with racist public policies that legalized the dumping of carcinogens like chloroprene into Black communities for generations [28]. In another part of the United States, a student's implicit bias when most Black patients come into a clinic on Medicaid may lead to the assumption that Black people are poor because of a genetic or cultural cause. Implicit bias in this example would fail to recognize that Black communities were targeted by large banks with predatory subprime loans for decades so that the 2008 housing crisis halved the wealth of the Black population in the United States, leading many Black families into poverty, using Medicaid and other government funding, and limiting their upward economic mobility [29, 30]. A student in Lebanon may visit a health clinic near one of the Palestinian refugee camps, see a discrepancy in the number of Palestinians with untreated or serious health conditions in the clinic lobby, and assume that the difference in health outcomes is due to culture. What the student may not see at that moment is how Palestinian refugees have been systemically, politically, and socially isolated from the general population of Lebanon in such a way that achieving a state of health equivalent to native Lebanese citizens is nearly impossible.

By allowing students to rely on implicit bias to attribute the causes of many health disparities to race, medical schools generate an environment in which conversations addressing health care inequality are superficial and lack full structural context, depriving students of the ability to ask questions such as: What is the actual cause of the racial health disparity when race is not based in biology? When emphasis in the classroom is not placed on the effect that social and economic factors can have on health, students leave the school without the vocabulary and general knowledge to articulate the ways in which health disparity can be propagated by the healthcare systems which are striving to mitigate those same disparities.

3.4 The History of Race and Medicine and the Future

Black and Brown communities' distrust toward medical professionals and the medical field is well-founded. The history that explains the underpinnings of this distrust is extensive and ripe with examples of race being used as an excuse for the abuse, experimentation, and harm of individuals who are not White-skinned. Some consider James Marion Sims to be the father of modern gynecology, having led research in groundbreaking advances in gynecology with inventions such as the Sims speculum and the Sims catheter. However, these advances in gynecology were made through the agonizing experimentation on Black women performed without anesthesia by Sims [9]. He would specifically purchase enslaved persons to practice his inventions and procedures, restraining patients when they couldn't tolerate the pain inflicted on them. A common misconception within the medical community at the time, which persists to this day, was that Black individuals felt less pain than White individuals. Sims cited this belief, stating that he did not feel the need to provide any kind of pain relief for the experimental subjects for this reason. Sims would go on to perform over 30 operations on one 17-year-old girl named Anarcha whom he had enslaved for over 5 years. Another lesser-known atrocity perpetrated by Sims was the experimentation on the children of enslaved women. One theory within the medical community at the time was that the cranial bones of Black infants fused much more quickly than White cranial bones, limiting the growth of the brain and leading to a decrease in intelligence. Sims sought to test this theory by keeping the skull bones unfused, prying the skulls of Black infants open to prevent the supposed premature fusion of the cranial bones. This led to the many deaths of Black infants, which Sims explained as poor maternal care by Black mothers. French physician François Marie Prevost similarly replicated these inhumane acts to perfect the cesarean section through experimentation on Black mothers. Edward Jennings developed a successful typhoid vaccination through experimentation on over 30 Black individuals [9]. An American bacteriologist named Mark F. Boyd performed experiments throughout his career in which he inoculated almost 500 Black patients with malaria. Specifically, he used a routinely deadly strain of malaria called *Plasmodium falciparum* in an effort to cure the infection by syphilis [31]. Boyd theorized that the high fevers generated by *P. falciparum* would kill the syphilis infection, but the attempted treatment failed and caused irreparable harm to hundreds of Black people.

Even after death, Black bodies were not able to escape being abused by the medical system. Dissection of cadavers became more and more popularized in medical education throughout the 1800s, and this increase in popularity required a comparable rise in the number of available bodies used for dissection. Medical schools had several means to procure Black cadavers, but one of the most common methods was graverobbing from Black cemeteries [32]. White medical school administrators would hire graverobbers to rob Black graveyards, which fueled the medical education of White medical students through gross dissection of those bodies. When graverobbing became more difficult to perform, medical schools began moving closer to almshouses, using the bodies of poor, primarily Black people for dissection. One of the believed reasons for which Harvard Medical School moved from Cambridge, Massachusetts to Boston, Massachusetts was to be located closer to Boston's almshouses and to be more competitive for cadaver procurement amongst medical schools as cadaver dissection became more popularized in medical education. To further illustrate the scope of this problem, in 1893, out of seven Baltimore medical schools that served over 1200 medical students, only 49 cadavers were not scavenged from graveyards or almshouses [33]. A survey done in 1913 of 55 medical schools determined a large majority of cadavers obtained for dissection were from almshouses [34].

In addition to physical, mental, and ethical abuse, physicians also stole inventions from African culture. The principle and procedure of inoculation to prevent disease, which later became the foundation on which vaccination was constructed, was already standard practice in some parts of Africa [35]. Onesimus was an enslaved person from modern-day Ghana who brought this idea from Africa to New England. Cotton Mather, followed closely by Edward Jenner, took this idea, which led to such incredible fame that King George IV appointed Dr. Jenner as physician extraordinary, without any credit or funds given to Onesimus. Even the name Onesimus, which was given to him by Cotton Mather, means useful, helpful, or profitable. Thomas Jefferson then tested this inoculation method on two-hundred people that were enslaved by him to evaluate the efficacy of inoculation before giving it to his own White family [9].

Health disparities for particular groups of people may become more prominent in the future. An anticipatory focus on these future health disparities could minimize the worst of their effects on health outcomes for these populations. Migrant populations are large and growing every year [36]. In 1990, an estimated 153 million people were migrants. In 2020, an estimated 281 million people migrated to different countries for various reasons, with the number of migrants increasing in all regions associated with the United Nations. The increase is particularly pronounced in Asia and Europe, with a near doubling in the migrant populations from ~48 million to almost 90 million in both regions. This number is expected to increase under the pressures generated by climate change [37]. With increasing numbers of floods, tsunamis, droughts, wildfires, and other natural disasters each year, the number of migrants fleeing natural disasters and famine is expected to increase proportionally.

Migrants to European countries have been shown to have poorer health outcomes than native residents, a phenomenon termed the migrant health deficit effect [38]. This disparity between native and migrant residents of European countries brews a toxic implicit bias within the minds of the European natives that migrants lack basic sanitation skills, are diseased, and have inferior customs and genetics. The strength of this implicit bias is affirmed if a native resident ever visits an emergency room or refugee camp where health disparities between native and non-native residents abound. Migrants to European countries are more vulnerable to communicable and noncommunicable diseases, occupational diseases, poor mental health, injuries, and maternal-child health complications [38, 39]. An Austrian review that contrasted the differences in health outcomes of migrants in Austria found that the migrant population has higher rates of heart disease, allergies, digestive, urogenital, and dermatological pathologies [40]. Mental health problems are also prevalent within migrant communities. One study of migrant communities living in 31 cities across 12 countries found that stress, anxiety disorders, panic attacks, and other psychiatric illnesses were some of the most common problems [41]. A study that examined the mental health of humanitarian migrants toward Australia found that a significant number of migrants met the criteria for post-traumatic stress disorder (PTSD) and severe mental illness [42, 43]. Out of 2399 examined humanitarian migrants to Australia, 762 met the criteria for PTSD, and 394 had severe mental illness. These findings are alarming and need to be understood by students who will be serving these migrant populations so that adequate care can be given in the future.

There are many proposed reasons why migrant populations have this large number of health deficits. One literature review proposed many compounding factors, such as suboptimal living situations, insecure employment opportunities, and past or current trauma [38]. Anci et al. observed a similar compounding of damaging factors concerning the prevalence of poor mental health within the migrant communities of Italy [44]. Traumatic situations, social marginalization, and lack of social support contribute to a lack of available protective factors toward mental health resilience, thereby predisposing migrant communities toward mental health deterioration. Additionally, the access to proper maternal healthcare for migrant mothers is a result of an inadequate number of language and culturally-versed translators within and outside of the healthcare setting, such as transit services [45]. This barrier to maternal healthcare results in problems reaching scheduled appointments, inequalities in maternal and neonatal outcomes, and inadequate utilization of readily available maternal healthcare services [45, 46].

Education striving to mitigate the effect of implicit bias on propagating these disparities should be implemented and can shield students from relying on implicit bias to explain health disparities with race, ethnicity, or culture.

3.5 Factors That Impact Success for Students of Color

Motivation is directly related to the success of any student. Whether it be positive or negative, academic motivation stems from various factors, including personal, family, social, and academically related factors. This section explains and provides recommended solutions for the negative impact of microaggressions, perceived academic bias, and other success inhibitors that can lead to hindered performance levels widening the academic performance gap between underrepresented minority (URM) students and their peers [47].

3.5.1 Microaggressions – Its Role and Implications in Medicine

In current times, racism has transformed into a subtler version of itself, called **modern or aversive racism**. This term is defined as racist actions that are covert and ambiguous, making them more challenging to identify and address [48]. Some argue that this new aversive form of racism, which is seen daily, can instigate significantly more racial aggression and anger than overt forms [49]. Additionally, since this type of racism is more difficult to recognize, there's a higher likelihood that it will, intentionally or unintentionally, contribute to increasing disparities among minorities in health care and education. This is why the term "racial **microaggressions**" was first introduced by Professor Chester Pierce in 1970 to describe these subtle acts of racism in everyday life [49, 50]. Microaggression refers to intentional and unintentional subtle verbal, non-verbal, and/or visual insults directed towards people of racial or ethnic minority groups [50]. Whether they be in the form of conversation, gesture, or tone, these exchanges are easily overlooked or dismissed in daily conversation as they have been considered "normal" and part of a regular dialogue in the past. Due to its commonplace nature, microaggressions can create inherent biases among the majority race and ethnic minorities, who accept these comments to be valid on a subconscious level. Racial microaggressions can be subdivided into three forms: microassault, microinsult, and microinvalidation.

3.5.2 Microassaults Vs. Microinsults Vs. Microinvalidations

Microassaults are "explicit racial derogations characterized primarily by a verbal or nonverbal attack meant to hurt the intended victim through name-calling, avoidant behavior, or purposeful discriminatory actions [50]." They can be similar to old-fashioned racism as they include consciously using derogatory terms such as "colored" or "Oriental" when referring to Black or Asian people, respectively. Other examples of microassaults would consist of displaying a "swastika" or choosing to serve a White customer before one who is a minority. These actions are referred to as "micro" as they are more likely to occur in private settings, preserving anonymity and ensuring personal safety for the offender.

Microinsults are "communications that convey rudeness and insensitivity and demean a person's racial heritage or identity [50]." They tend to be unconscious remarks with hidden layers of insult, most of which are usually unknown to the offender. Examples include asking a minority group member at a higher job position, "how did you get your job?" which brings a question to the person's qualifications and skills to fit the position. While these questions may come from a place of harmless curiosity and interest, hearing them frequently can be detrimental to someone's self-identity and professional development. Some examples of nonverbal microinsults include a White manager failing to make eye contact with a Black employee when talking to a group of people or a professor at a college not acknowledging students of color in the classroom. These nonverbal scenarios send subliminal messages to the persons of color that their presence is insignificant [50].

Microinvalidations use communication to "exclude, negate, or nullify the psychological thoughts, feelings or experiential reality of a person of color [50]." Some examples include asking a person of color where they were born or saying that a second-generation Asian American's English is good. Both of these situations dismiss the minority group member's American heritage and imply that they will forever be a foreigner in their own country because of the way they look. Furthermore, commenting to a Black individual that one does not "see color" or that "everyone is the same" invalidates and negates their personal experiences around their race and culture [50]. Further examples are provided in Table 3.1, as adapted from [50]. Chapter 6 will provide actionable items elaborating on appropriate ways to address microaggressions.

Table 3.1 Examples of racial microaggressions in medicine and the underlying message [50]

Microaggression in medicine	Underlying message
A White patient does not want to work with a provider of color because "they won't understand my problem."	Physicians of color are foreigners because of their race/ethnicity.
A patient assumes that a Black physician is a nurse based solely on their race.	It is unusual for a Black person to be the leading healthcare provider.
A patient shows concern about discussing issues with a White physician who responds with, "you don't have to worry, I don't see color."	Your racial experiences are not valid.
When a healthcare provider assumes that a Native American patient has a history of substance use.	People from certain races are suffering from stereotypical struggles.
A patient of color is hesitant about discussing racial issues with his White female physician. She replies, "Don't worry, I'm a woman so I understand the discrimination you face."	Your racial oppression is not any different from my gender oppression.
A medical school advisor tells a Black student that "if you work hard, you can succeed like your peers."	People of color are incompetent and/or do not work as hard as their White counterparts.
A Black patient is loud, confrontational, and emotional during a visit, so the physician diagnoses her with borderline personality disorder.	If your attitude/behavior does not align with that of the majority, then there must be an underlying medical reason.
A clinic chooses to provide more thorough care to White patients over patients of color.	White people are treated with more urgency and importance than people of color.
Every physician at a primary care clinic is White.	There's no room for physicians of color/only White people can succeed.

3.5.3 How Microaggressions Affect Medical Students' Ability to Learn

The ways that microaggressions impact medical students can be categorized into three broad thematic areas: students' feelings of being devalued by microaggressions; their experiences of the impact microaggressions have; and their suggestions for promoting inclusion. Stress, frustration, and anger resulting from microaggressions negatively impact learning, academic performance, and overall well-being [51].

Minority students, including those of color, often feel underrepresented and thereby may experience isolation and exclusion due to microaggressions. This may manifest as instances where students feel ignored or passed up regarding opportunities, sharing their perspectives, or making academic or classroom contributions, yet experiencing the feeling of being constantly watched. The apprehension of being shunned or ignored makes these students retreat from drawing attention in class or academic activities. The assumption of being intellectually inferior, of not having the ability to achieve high exam scores, is another deterrent for students from diverse non-mainstream backgrounds. It is often seen that these students will not perform well in class, and when they do, people do not believe it; inclusion remains a theory yet to be put into practice. Minoritized students may also feel devalued by microaggressions expressed as race-based curricula that pathologize race as a disease risk factor without contextualization. Chapter 5 will provide practical tips for acknowledging and addressing these curricular microaggressions.

Microaggressions negatively impact learning, academic performance, and well-being in many ways, even to the extent that students may need therapy or medical intervention to cope [52]. Many lose confidence in themselves and their academic ability. Dimensions of this impact include (1) stress, anxiety, lack of concentration, and even self-doubt requiring therapy and/or anxiety medications; (2) divesting in discourse such that underrepresented students have no voice and, as a result, withdraw from classroom and social contributions and/or interactions; (3) the "minority tax," the expectation that people of color take on the burden of addressing and solving diversity issues and coordinating diversity-related meetings and events in their organization, and of shouldering the responsibility of having to explain to or educate their classmates about inequities and injustices; and (4) facets of resilience and coping, whereby students experiencing microaggressions have to work harder to prove themselves, an act that likely influences their grades favorably but at a cost to their well-being.

Students recommend the following strategies for promoting inclusion [52]: (1) diversity across the student body, faculty, staff, and leadership; (2) allyship, referring to engaging White people in promoting diversity and inclusion; (3) curriculum reform to eliminate pathologizing of race and ethnicity while emphasizing SDOH and promoting health equity (4) curricular reform that takes a cultural humility approach (see Chapter 4) to open conversations about race, ethnicity, and racism (5) both informal and formal safe spaces for underrepresented groups to connect with others with similar backgrounds without feeling judged [52].

Evidence demonstrates that microaggressions result in strong emotions of anger, anxiety, stress, and frustration, which can distract students from their academic pursuits [53]. Microaggressions also affect students' overall well-being, and it is important to create an enabling institutional and socio-cultural environment for underrepresented students to be able to thrive. In addition, for a health care system to function effectively, there must be inclusive and equitable representation in its workforce to support and serve the needs of its constituent communities [53]. It is time for "a call to action for health professional schools to comply with stated missions and values related to diversity, equity, and inclusion" (DEI) and accrediting bodies such as the Liaison Committee on Medical Education (LCME), American Osteopathic Association Commission on Osteopathic College Accreditation (COCA) and American Association of Colleges of Nursing (AACN) to step up and ensure compliance to policies around inclusive learning environments [51]. To do so, policies need to be adapted to ensure compliance around inclusion and eliminate bias related to race, gender, and ethnicity, thus promoting inclusive excellence [54]. Chapter 6 of this manual presents evidence-based practices and strategies to support curriculum managers and institutional administrators in achieving these goals.

3.5.4 Practicing Micro-Affirmations

Micro-affirmations are a new practice that has been gaining more recognition due to its emphasis on inclusion and meaningful dialogue, including "small acts which are often ephemeral and hard-to-see, public and private events, often unconscious but very effective, which occur wherever people wish to help others to succeed. Micro-affirmations are tiny acts of opening doors to opportunity, gestures of inclusion and caring, and graceful acts of listening. Micro-affirmations lie in the practice of generosity, in consistently giving credit to others—in providing comfort and support when others are in distress when there has been a failure at the bench, or an idea that did not work out, or a public attack" [55]. The practice of micro-affirmations can be summarized into three main actions [56]:

1. Active listening – this involves taking the time to listen to people of color with intention and communicate through eye contact, open posture, summarizing thoughts, and asking clarifying questions that demonstrate engagement in the conversation.
2. Recognizing and validating experiences – this action includes understanding and empathizing with the shared experiences of a member of the minority group, expressing care for the event, and offering a helping hand.
3. Affirming emotional reactions – this asks for the use of verbal acknowledgment of feelings, and the willingness to assist with empowerment and healing.

3.6 Elaborating on the Correlation Between Students' Thoughts and Their Ability to Excel

Having a sense of belonging and a growth mindset are two fundamental aspects of learning that improve students' motivation and, thereby, help them excel in academics while simultaneously reducing gender, racial, and social class gaps in all levels of education [57]. Past survey data in research reveals that feeling uncertain about belonging in an academic setting is commonplace for most URM students, who are often negatively stereotyped in an environment that they describe as being "prejudiced and hostile [58]." This not only makes these students feel less valued and visible to their institutions, but it also adds an extra layer of stress and burden, which puts them at a disadvantage relative to their peers from the beginning, contributing to wider achievement gaps [58].

3.6.1 Perceived Contributors to Success in Medical School

To implement structural changes that create equitable opportunities for success favoring URM students in medical education, we must first identify facilitators and inhibitors of success that are currently in place. According to minority students, some recognized facilitators of success include "social support, education, exposure to the field of medicine, group identity, faith, and social responsibility," while some inhibiting factors include financial, lack of support, testing, self-limitation, cultural representation, and discrimination [59, 60].

Students' most significant facilitator of success is social support in both personal and professional settings. Peers, professors, and academic advisors all contribute directly to the level of stress, challenge, and discrimination faced by minority students. Additionally, working with supportive faculty, hospital staff, and attending physicians opens more doors for professional development and validates the students' sense of belonging. Social support further encompasses having peers from similar ethnic and cultural backgrounds, creating a more inclusive environment that affirms their presence and increases confidence and performance levels. Alternatively, discrimination and lack of support, which can go hand-in-hand, have been ranked the two most detrimental inhibitors of success for URM students in medical school. Discrimination, both racial and gender, can be present in the form of microaggressions and implicit bias, both of which are systemic and harder to identify and change [60]. Lack of support, often due to discrimination, comes in the form of "ignorance and lack of appreciation for diversity experiences [58]." School administrators fail to understand the need for more diversity and better representation in curricula to create an accepting environment overall. This exhibits race-based discrimination and shows a lack of proper support and understanding of the experiences and struggles faced by minority students [61]. Moreover, the support that peers and administrators often offer can be ingenuine curiosity and attention towards cultural events and lifestyles that lead to students feeling self-conscious and appropriated rather than supported. Another barrier to students' success is the stereotype threat, which creates a negative image of minority groups, attaching them to certain negative behaviors and a lack of self-efficacy [62].

3.6.2 Achievement Through Equity in Healthcare Training

A health system can only be functional and high-quality when it achieves positive health outcomes for its constituents, to which equity plays a vital role. According to the United States Agency for International Development (USAID), which resources and strengthens health systems across the rest of the world, an equitable health system affords every individual a fair opportunity to attain their highest level of health regardless of social or demographic factors, with particular emphasis on underserved, socially excluded, and vulnerable populations [62]. In recent years, similar views and calls for equity in the American health system have been reflected in leading journals: an editorial in *The Lancet* referred to racism as "a public health emergency of global concern" and the "root cause of continued disparities in death and disease between Black and [W]hite people in the USA [63]." Another editorial in *The New England Journal of Medicine* (*NEJM*) referred to slavery's "legacy of racism, injustice, and brutality" and that this "legacy infects medicine as it does all social institutions" [64]. Racism and inequitable access to care impacts not only patients but also all cadres of health care providers and, to mitigate the problem, there needs to be a holistic approach targeting equitable patient-centered care and ensuring availability of the appropriate workforce that can perceive and respond to the health needs of their consumers. All institutions and individuals must respond to this urgent call for equity within the American health system before the problem manifests with deeper roots into the fabric of the health system, rendering it fragmented and dysfunctional. The global COVID-19 pandemic and the concurrent surfacing of major harmful biases and systemic racism, particularly in America, have brought to the forefront the need for all health care professionals (working and learning) to confront racism and systemic oppression [65].

There are many forms of harmful bias and discrimination in health care, which can be both conscious/explicit or unconscious/implicit, an example of the latter being the negative evaluation of a person based on characteristics such as race, gender, sexual orientation, or physical ability [66]. Discrimination is a behavior perpetrated by individuals or institutions practicing inequitable or negative treatment of people from certain social groups that results in social advantages or disadvantages [66]. These practices and behaviors must be mitigated, and all health care individuals and institutions must work collaboratively in the process, subsequently tipping the needle toward greater DEI. It is noteworthy that promoting DEI is not a new concept—the healthcare system for decades has been committed to increasing the number of healthcare learners and practitioners from marginalized and excluded population groups, including women. However, the health system in the twenty-first century calls for a paradigm shift so that efforts towards achieving actual DEI must encompass all marginalized and excluded subgroups and not only focus on racial diversity. "For the true benefits of diversity efforts to be realized, academic medicine [and we contend all health professions education programs] must move their efforts from the margins to the mainstream [65].” Inclusion must also be “integrated into the core workings of the institution and framed as integral to achieving excellence [67].” In this context, diversity embodies “inclusiveness, mutual respect, and multiple perspectives and [serving] as a catalyst for change resulting in health equity [65].”

Some important themes to consider for effectively achieving the aforementioned paradigm shift for greater DEI include culture change, listening to learners, and bias-free assessment and evaluation.

Culture change. Every health care professional at every level of the health ecosystem must embrace a comprehensive culture change around DEI so that it becomes a routine practice, not only awareness. Pre- and in-service periodic anti-bias and antidiscrimination training, including antiracism training, bystander/upstander training, and training in responding to microaggressions, must be mandatory for all members in the health ecosystem, including board members, executives, managers, administrators, clinicians, faculty, students, and staff. The practice of “blame and shame” against patients and health system actors must be eliminated, resulting in serious consequences. All health care professionals must have the tools and knowledge on how to respond to discriminatory behaviors in health practices and learning environments, and policies for ensuring compliance must be in place. Strategies for building a culture of inclusivity in medical education are provided in Chap. 6 of this manual.

Listening to learners. Students, many of whom relate to or come from underrepresented groups, bring a variety of perspectives and experiences that can enrich curricula against bias and discrimination. Therefore, they must have a voice in and be able to contribute to the design, development, and implementation of such anti-bias and antidiscrimination curricula. Educational institutions must foster a culture of healthy learner-teacher exchange and train faculty members to be more supportive to learners and serve as their mentors and allies. Chapter 4 of this manual presents cultural humility as a means to achieving this goal.

Bias-free assessment and evaluation. All health care institutions must eliminate harmful bias and embrace bias-free assessment and evaluation, be it for admissions, pre- or in-service education, clinical training programs, or systems of reward, promotion, and assessment in health professions education. Such structural weaknesses in the system must be eliminated. Furthermore, such bias-free practices must also embrace people who identify with more than one marginalized group, such as people living with disabilities, people from varied faiths and traditions, low-income backgrounds, and graduates from international medical schools training in the United States. Chapters 5 and 6 of this manual include strategies and practices for faculty and curriculum managers to mitigate bias in assessment and evaluation.

3.6.3 Causes and Consequences of Lower Assessed Performances

Even though racial and ethnic diversity in the healthcare workforce in the U.S. is a national priority and more students from diverse backgrounds are entering medical schools, there is no concurrent increase in the diversity of trainees in residency programs for competitive specialties and academic medicine faculty. Differences exist in clinical performance between URM students in medicine and students who are not, which influences their residency selection and academic career paths. This inequity impacts access to health care for underrepresented communities, increases health care disparities, and results in poor quality of care for underserved populations [68]. Underrepresented racial and ethnic groups in medicine include African Americans and Latinos, each constituting 4% of the physician population, and Native Americans and Alaska Natives, constituting 0.4% of the physician population, compared with 13%, 17%, and 2%, respectively, of the general population [68]. While medical schools have instituted initiatives such as pipeline programs and holistic admissions processes to increase the diversity of the health care workforce, the same cannot be said for residency programs in competitive specialties or faculty positions in academic medical centers [69]. As a result, the pipeline for professionals from URM groups entering competitive residencies and academic medicine is leaking. Instead, many medical graduates from URM groups are entering residencies and careers in primary care and practicing medicine outside academic medical centers [70]. A root cause for this leaky pipeline is differential opportunities created by medical school assessments for URM students compared with their peers from groups with majority representation [70]. In addition, the competitive nature of the United States Medical Licensing Examination (USMLE) Step 1 exam, which required, until recently, higher scores for entry into various disciplines and careers in academia, also present a barrier for URM graduates, many of whom often received lower scores on major standardized gateway exams [71]. Such group differences manifest as long-term consequences of structural racism, creating inequities in education, housing, economic, and social opportunities [72, 73]. The causes and consequences of lower assessment can be categorized into individual (student or faculty/resident rater), interpersonal (student and faculty/resident rater), and cultural and structural factors that impact a student's performance and/or the accuracy of the assessment of their performance [70].

Individual and interpersonal factors. URM students in medicine must continuously strive to demonstrate their ability to fulfill standards in clinical environments designed for the majority group of students [74]. This is a distinct example of microaggressions or overt racism that generate the stress response in minority students, leading to impaired critical thinking, lower speech fluency, and sleep disorders affecting long-term memory [74]. Often these minority students are heavily impacted by stereotypical threats, which is manifested by less active engagement, lower cognitive risk-taking, and less acceptance of feedback [72]. They tend to be more race-conscious and take personal responsibility for addressing equity gaps in care provided to patients from minority or URM groups, and often suffer a sense of isolation and low social capital, all of which impact their professional capabilities and contributions [61, 72].

Structural and Cultural Issues. These are issues in the preclerkship environment, but also the clinical learning environment, such as team assignments where teams have little or no racial or ethnic diversity, which may add to URM student's sense of isolation and lack of belonging [73]. Other examples include instances when students proficient in other languages are preferentially assigned to work with patients with low English proficiency with no institutional acknowledgment that this is time-consuming, nor is this extra effort accounted for in standard assessments [75]. These structural issues often influence performance assessments and most standardized exams. The evident differences between the minority and majority populations' performance on standardized exams must be recognized, and institutional policies must be adjusted so that the practice of offering sizeable weight to standardized knowledge-based clerkship exams in determining honors grades is eliminated. To ensure equitable assessment, institutions must adopt "normative grading policies (e.g., awarding honors grades to the top 25% of the class), rather than criterion-based grading policies (e.g., awarding honors grades to all who exceed a specified level of competency) [70]."

Overall, unlike their peers, URM students face academic and professional disadvantages and a greater cognitive and emotional load in learning and performing, which impact their ability to thrive. If institutions are committed to complying with the national priority for racial and ethnic diversity in the healthcare workforce in the United States, and if they are committed to being recognized as equal opportunity educational environments for learning, they must recognize and fix this major flaw in their assessment and grading processes. This calls for an integrated systems approach to change, which is possible with "redesign of the medical school curriculum, learning and assessment methods, and faculty development programs so that all constituents (i.e., faculty, leadership) are equally responsible for (i) understanding the issues of racism, bias, and privilege, and how they manifest in the educational and health care environment; (ii) recognizing and addressing microaggressions when they occur in our environments; (iii) mentoring effectively across racial, ethnic, and other group differences; and (iv) redesigning health care delivery systems and educating individuals to address health care disparities [70]."

3.7 Conclusion

As evidenced in this chapter, medical education has a history that is filled with examples of abuse, neglect, and active participation with systems, studies, and people who facilitate propagation of REHD.

Medical education today continues to perpetuate REHD through the medium of implicit bias. Medical educators make time to emphasize differences between races and ethnicities with regard to pathology while failing to provide context for why that health disparity exists, leaving students to craft their own conclusions. With this approach to educating about health disparities, students leave school without the vocabulary and general knowledge to articulate the ways in which health disparities can be propagated by the healthcare systems which are striving to mitigate those same disparities.

Students of color are required to adjust to predominantly White institutions and to the social norms and cultures of predominantly White environments, on top of the already rigorous physical and mental demands of medical education and medical practice. The contributors to success in medical school are multifactorial, but the correlation between a student's mental state and their academic success is directly proportional.

Microaggressions and its subsets – microinsults, microassaults, and microinvalidations – can lead to decreased performance, increased stress response, poor mental health, and poor overall health. Current research addressed in this chapter indicates the importance of revamping how performances are assessed using equitable options to reduce the gap in educational disparities in medicine. By recognizing and improving the criteria for assessing medical school performances, institutions can enhance opportunities for more students of color to score competitively on institutional, board, and licensing exams, to eventually become competitive applicants for residency programs.

In the next few chapters of this manual, ways in which to mitigate the challenges of teaching about race, racism, and how medical educators and institutions can acknowledge and address REHD will be discussed in hopes that future medical practitioners will be adequately prepared to confront these disparities in their practice of medicine.

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Chapter 4
Cultural Humility: An Approach to Mitigate the Challenges of Teaching About Race and Racism

Connor Haskins and Sebastian Ramos

4.1 Introduction

The previous chapters have carefully explored racial and ethnic health disparities (REHD) and the need to adequately address them in Undergraduate Medical Education (UME) pre-clerkship classrooms. To reiterate, UME institutions must take the time to educate their students on topics involving REHD. The approach taken becomes an important decision. Teaching REHD with a focus on disparity statistics, cultural competence, and social determinants of health (SDOH) has been commonly used in recent years [1]. Although these approaches may reach some, if not most, of the goals of a given organization regarding diversity issues, they often fail to adequately address racism as a source of inequity and systems that continue to drive an unbalanced distribution of medical resources [1]. Due to past approaches not acknowledging the intricacies of racism, organizations such as the Association of American Medical Colleges in the United States have pressed for medical educators to gain knowledge and the skills to confront racism as it pertains to REHD in the classroom [1]. This pressure demands a new approach on "how-to" and "what-to" teach. Chapter 4 aims to explore the challenges educators will face when teaching about race and racism. To mitigate these challenges, this chapter also proposes a change in attitude from the medical educators. The concept of **cultural humility** is introduced in this chapter as a lens that will guide medical educators in facilitating discussions and messages around REHD. The authors then advocate for cultural humility, rather than solely cultural competency, as the foundation for advancing

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discussions about REHD in the classroom. This theoretical foundation will lay the groundwork for realistic practices on best addressing and teaching REHD, which will be explored later in this chapter as well as in Chaps. 5 and 6.

4.2 Shift in Pedagogy & Its Dilemmas

The definition of pedagogy is the “method and practice of teaching [2].” Pedagogy refers to the act of teaching as “two parties (the teacher and the taught) who work together in some program (the subject matter) designed to modify the learner’s experience and understanding in some way [3].” The outcome – the learner’s experience and understanding – can be affected by several factors, including level of knowledge on the subject, readiness of the student, or nonverbal behaviors. Depending on the objective of the teacher or the pedagogical theory being taken into consideration, it can either help or hinder the learner’s experience. Teaching is an art and has a delicate balance to ensure the message is received well. As many higher education institutions are asking teachers to confront racism in the classroom, traditional pedagogical approaches are shifting to add critically oriented discussions, where the students are required to reflect on themselves and the world around them. Yannuzzi and Martin [4] from Penn State University offer more insight into the changing dynamics of the classroom and how the classroom will be influenced with this shift.

Critically oriented discussions in the classroom will be an active process, and will require that the teacher becomes a facilitator, which breaks away from traditional classroom roles and procedures [4]. The facilitator will have to rely on their voice as well as the voices of students to achieve the lesson plan. As voices mix in a classroom discussion, certain voices can have a major impact on the reception of the lesson due to perceived power dynamics. These power dynamics, or abilities to influence, stem directly from social or cultural identities. Yannuzzi and Martin separate identities into three different categories and explain how each one can affect a teacher’s or student’s ability to participate in or influence discussion [4]. These identities are categorically named master, interactional, and personal. Master identity refers to external identities, like race, age, and even established social groups. Master identities create various expectations for how someone should think or feel based on a social group. These identities may deter some individuals from speaking because they want to be seen as something different than their social group [4]. Interactional identity is how someone defines themselves in relation to others, for instance, teacher vs. student. A teacher is assumed to have an authoritative role, but in the case of a facilitator, they must maintain structure in the classroom while letting students be able to freely think and control a portion of the conversation [4]. Lastly, personal identity relates to self-perception, including values and beliefs. In critically oriented discussions, students are encouraged to critique societal systems, such as healthcare. However, the students and teacher(s), who are actively participating, will come into these discussions with a wide spectrum of personal values and beliefs. Depending on individual personalities, verbal and nonverbal actions may positively or negatively impact the quality of the lesson [4]. Each identity type has its own unique influence on discussion, but they do not operate in isolation.

Yannuzzi and Martin assert that it is important to be aware of identity interaction and its influence on voices in the classroom because it will create tension or dilemmas [4]. The authors describe that there are three overall dilemmas that will occur with critically oriented discussions. They include the dilemmas of lesson management, emotional labor, and structure.

1. **The dilemma of lesson management** [4] – Teachers who have critically oriented classroom discussions manage their course lessons using their students' voices. Usually, teachers would engage in specific activities to achieve a final learning objective, but with critically oriented discussions, there is an end goal with no predetermined way to reach that goal. The decision to pick what discussion is pertinent is mutually shared between the teacher and their students. As alluded to earlier, there is an added element of uncontrollability that presents itself due to the interactions of identities on voices. Students with dominant voices can hijack the overall goal of the conversation, or an important point can be raised outside of the scope of the original discussion, however, the teacher does not feel competent to discuss it further.
2. **The dilemma of emotional labor** [4] – The authors define emotional labor as the work that is exerted to manage emotions according to role expectations and the context of a given interaction, i.e., a person is trying to either express or suppress their emotions to match the situation. Due to the passive learning that accompanies traditional practices in the classroom, many students in higher education are not prepared for more intense discussions about emotionally charged topics. Additionally, some teachers are not prepared to manage their own emotional labor or that of their students. Not every student who pursues medical education wants to bring about social change, so they can be apprehensive about trying to put in any emotional labor. Critically oriented discussions about race may not be a consideration in their career-oriented goals.
3. **The dilemma of structure** [4]– The structure of the classroom can be variable. For example, how much diversity is in a class? How critical are discussions becoming? What are the lessons that are taught? What is required of the curriculum from the institution? The teacher may control the structure of the class, but it is imperative to look at how the institution is influencing classroom content, which Chap. 6 explains in more detail. Yannuzzi and Martin explain that higher education institutions, such as medical schools, will outwardly support the practice of inclusive and critically oriented discussions, while internally following accrediting bodies and imposing policies and procedures that may do the opposite, such as tighter control of syllabi and course schedules. These policies leave medical educators with inadequate teaching time to explore more complex issues like race and health disparities. An added layer to this dilemma is that students evaluate teachers. The institution can use feedback from students to assess how well teachers are adhering to the curriculum. Some teachers may stray away

from challenging students because of fear of being negatively evaluated for the emotional labor they would put students through.

4.3 Challenges with Teaching Race, Racism, and Racial Justice

Balancing the role of a teacher and facilitator can be a challenge for the medical educator, and critically oriented discussions about race and racism may add another set of unique challenges. Harbin et al. [5] conducted a systematic review of literature that illustrates five of those unique challenges.

1. **Incomplete understanding of racial identity** [5]– Many students do not fully grasp or comprehend race as a social construct. This reinforces misconceptions, perpetuates biases, and leads to continued inequalities. Some students still believe that race is a fixed biological concept, or they focus on the individual manifestations of racism rather than the bigger institutional or structural manifestations. Chapter 1 provides a more in-depth explanation of race as a social construct.
2. **Resistance from White students** [5]– When White supremacist thought processes are questioned and investigated, some White students may experience a crisis. This is because conversations that challenge deeply held beliefs may trigger feelings of guilt or shame. As a result, emotions tend to erupt with White students trying to protect themselves by devising excuses for their own or others' behaviors, or lashing out against people of color. These feelings may present as microaggressions or acts of outright racism.
3. **Complicated participation for students of color** [5]– There is an acknowledgment that students who have experienced racial injustice can teach others using personal experience. However, not every student of color has explored how their identities and experiences with injustice have affected them mentally. Harbin et al. warn that discussions surrounding personal experiences can be potentially harmful if students feel forced or unprepared to share.
4. **Uncertainty of how to take action** [5]**–** The topic of racial injustice is a highly personal topic that may induce a range of emotions, such as resentment, guilt, or empathy. Instructors may be uncomfortable working in highly emotional settings and may struggle to lead successful classroom discussions. Furthermore, research done by Edgoose et al., suggests that medical educators perceive their knowledge and experience on race, racism, and racial injustices to be insufficient to appropriately teach their students [1]. Overall, medical educators, who are well-versed in their niche of the medical sciences, may feel that their lack of knowledge of race, racism, and racial justice results in a lack of confidence in teaching and subsequent inaction [1].

5. **Challenge to authority** [5]– Faculty may face challenges as they talk about race or racism because of how they are perceived. Harbin et al. explains that faculty of color are more likely to face racial bias in the classroom with White students regarding them as less competent and knowledgeable. Comparably, White faculty members were regarded with a greater level of skepticism and distrust by students of color. Given these student perceptions and internal biases, faculty members often struggle to maintain their expert authority while refuting misconceptions and encouraging a more open learning classroom environment.

4.4 Cultural Humility: An Evolved Practice from Cultural Competency

In the last two sections, the various dilemmas and challenges that present with critically oriented discussions of race and racism were explored. In summary, the medical educator will assume the dual role of a teacher and facilitator. Medical educators are going to have to manage their voices and emotions as well as the voices and emotions of others to correctly convey effective messages regarding topics on which they themselves may not be experts [4, 5]. To confront this potentially challenging task, we suggest adopting a cultural humility approach. This practice is designed to mitigate the challenges previously presented by strengthening relationships, addressing historical injustices, and fostering equitable care. Before delving more into the practice of cultural humility, a brief comparison between cultural humility and cultural competence must be understood. Not surprisingly, cultural humility and cultural competency are commonly associated with each other. Although they both carry the word cultural, the latter part of the name invokes a subtle, yet important difference that is worth exploring before learning more about cultural humility.

Cultural competency in medical education is a term often used as a model to improve cross-cultural communication and physician-patient relationships. Cultural competency is defined as "the ability of individuals to establish effective interpersonal and working relationships that supersede cultural differences [6]." Lanting et al., define cultural competency in medicine as a "set of attitudes, knowledge, and skills that are necessary for care providers to effectively interact with culturally and ethnically diverse patient populations [7]." Cultural competency was developed as a solution to reduce REHD [8]. However, this concept has elicited concern from clinicians, medical educators, and public health experts for its limitations in addressing the lifelong commitment necessary for better outcomes in ever-increasingly multicultural healthcare settings [9]. For instance, a systematic review of the literature on interventions designed to improve cultural competency in healthcare providers demonstrated that cultural competency training improved knowledge, attitudes, skills, and even patient satisfaction across 17, 21, 14, and 3 studies, respectively [8]. However, these trainings did not improve medication adherence, health outcomes, or equity of services, highlighting the need for a more effective model [8].

Cultural humility, in contrast, is gaining more appraisal among experts due to its sustainable goal in multicultural medical education [10]. **Cultural humility** is a life-long process of continual reflection upon one's own cultural identity and biases and how these factors impact interpersonal communication and professional relationships [10]. Cultural humility has five key attributes: openness, self-awareness, egoless, supportive interaction, and self-reflection (Fig. 4.1) [10]. These attributes will be reviewed shortly with a model case (*see Sect. 4.4.1*). As described by Tervalon and Murray-García [11], the practice of cultural humility can be applied to all aspects of one's life and transcends the realm of academia [11]. For instance, humility is needed when individuals commit to self-reflection and self-awareness practices as lifelong learners, healthcare providers display humility when challenging the power imbalances in physician-patient relationships by focusing on patient-centered care, and humility is found in healthy and dynamic relationships with community partnerships [11].

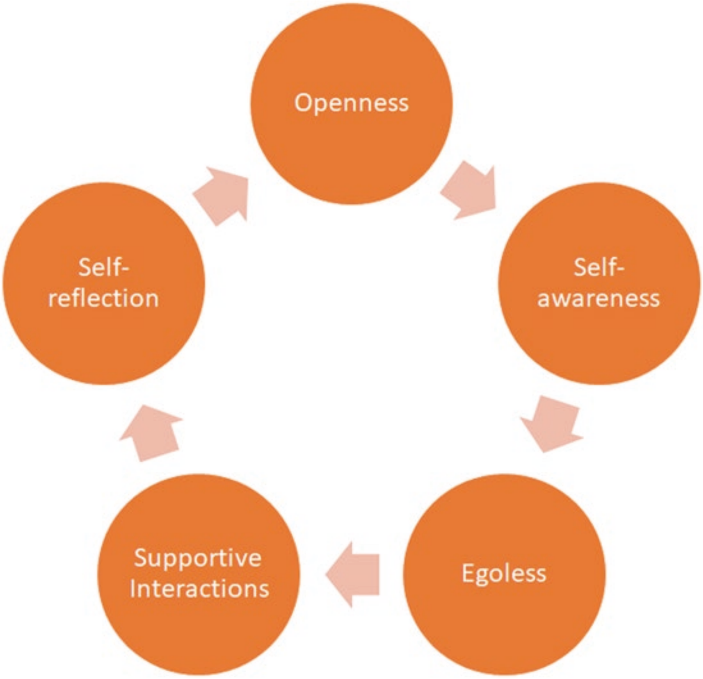

Fig. 4.1 A scheme representing the main themes of cultural humility. Its cyclical nature demonstrates the life-long process of cultural humility

The main difference between cultural competency and cultural humility is that cultural competency is focused primarily on having a basic awareness of diverse cultures, with an open and supportive attitude but little to no focus on self-reflection and self-awareness [9]. Theoretically, cultural humility is cultural competency with an added dedication to life-long learning surrounding diverse cultures and having the willingness and humbleness to listen and learn from people within distinct cultures. This principle is ideally suited to increase students' understanding of REHD and reduce such disparities [12, 13]. Additionally, the word competency suggests one achieves a degree of proficiency that remains constant throughout our lives, when realistically, cultural understanding requires continuous self-reflection and self-critique [8]. For instance, implicit bias training shines a light on participants' implicit biases and how these play out in different settings. However, training does not eliminate implicit biases held by participants. Chapter 3 provides further discussions on implicit biases. This competency-based model displayed widely throughout medical education concerns experts regarding the patient-physician relationship because it reinforces stereotypes, assumes complete cultural proficiency, and alludes to an endpoint to learning [11, 14].

A novel study, performed by Isaacson, reinforces the limitations of cultural competency [9]. In the study, senior nursing students were asked about their perception of their cultural competency before and after being invited to a Native American reservation. The results showed that most students perceived themselves as culturally competent, but after their immersion, their perception decreased [9]. Additionally, those who perceived themselves as culturally competent exerted negative stereotypes when interacting with residents from the reservation. Isaacson goes on to mention that three main themes emerged from the study: "seeing with closed eyes, seeing through a fused horizon, and disruption to reshaping" [9]. These results show the misperceptions of cultural competency and its limitations in qualifying as best practice to instruct health professions students about REHD.

Although cultural humility is more often applied to healthcare settings in the context of the physician-patient relationship, experts suggest that cultural humility should also be carried out more broadly, including the medical educator-student relationship [10, 15]. To address this endeavor, a table summarizing evidence-based and experiential-based practical suggestions was created. These suggestions can be found in Table 4.1. After viewing the table, two brief examples meant to exemplify successful (Sect. 4.4.1) versus unsuccessful (Sect. 4.4.2) uses of cultural humility in the classroom are provided. At the end of each case, there are explanations of how each attribute of cultural humility has been utilized in the interactions. These cases do not represent actual events or persons but are inspired by medical educator-student interactions experienced by the authors and their peers.

4.4.1 Model Case

Professor Z is teaching a subject in which race is attributed to an increased risk for disease burden. "Among the risks for asthma, being African American is one of them," [17, 18] said Professor Z.

Table 4.1 Practical suggestions for how to implement the cultural humility approach in the classroom and challenges it could help mitigate

Cultural humility approach	Practical ways to implement this approach	Challenges that can be addressed
Prepare the classroom [1]	• Moving chairs in the physical classroom to have an engaging discussion. • Have breakout rooms ready on Zoom.	• Lesson management • Structure
Practice introspection to raise awareness of implicit biases [1, 4, 5]	• Explore implicit biases (refer to Chap. 3 for more resources) to better control emotionally charged responses. • Explore your own social and cultural identities. • Analyze behaviors to address new or hidden biases or identities that failed to appear initially.	• Lesson management • Emotional labor • Structure • Uncertainty of how to take action • Challenge to authority
Practice strategic empathy [5]	• Listen attentively. • For statements rooted in false stereotypes or misconceptions, address the student with curiosity but with the goal of stopping the spread of misinformation [5]. • For example, "Tell me more about that..." or "Have you had some personal experience that might help us understand where you are coming from?" [5]	• Lesson management • Emotional labor • Structure • Simplistic models of racial identity • Resistance from White students • Uncertainty of how to take action • Challenge to authority
Create guidelines to maintain a safe environment [4, 5]	• On the first day of class, create an ever-changing set of guidelines that provide the most simplistic but necessary rules that allow respect for one another. • Address microaggressions, and do not allow intolerant speech. • Examples of guidelines: "Listen respectfully without interruption. Criticize ideas, not individuals or groups. Do not expect any individuals to speak on behalf of their gender, ethnic group, class, or status [16]."	• Lesson management • Emotional labor • Structure • Resistance from White students • Complicated participation for students of color • Uncertainty of how to take action • Challenge to authority
Model vulnerability [5]	• Self-disclose your background and expertise on the subject matter. • Share personal experiences so that others can add their experiences to the conversation.	• Lesson management • Emotional labor • Complicated participation for students of color • Uncertainty of how to take action • Challenge to authority
Continuously educate yourself [4, 5]	• Regularly revisit biases and social identities. • Research ongoing projects on REHD and SDOH. • Acquire more tools on how to teach about race, racism, and racial justice.	• Lesson management • Emotional labor • Simplistic models of racism • Resistance from White students • Uncertainty of how to take action • Challenge to authority

Toni, a student in Professor Z's class, did not agree with a statement made by Professor Z nor with the way it was delivered, and she sought clarification. At first, Toni felt uncomfortable asking for clarification and providing a suggestion due to the perceived hierarchy in medical education. However, Toni remembered that their medical school had emphasized diversity, equity, and inclusion (DEI) as core values for the university. "I think it will be better if I email Professor Z instead," Toni said to herself just before speaking out because she realized the lecture was running a little behind.

In the email, Toni wrote:

> I wanted to reach out to discuss what was said in today's lecture regarding asthma risk factors. When you said that being African American was a risk for asthma, I found myself questioning why that was. I believe that it can be misleading to say race, rather than racism, is a risk for asthma [19, 20]. We did not spend much time covering the reasoning behind risk factors, such as SDOH, which makes sense given the time we had. Perhaps we can discuss this via email or during office hours?

Before responding to the email, Professor Z had some initial thoughts and reflected on them:

> "I have been working as a clinician for two decades. I have treated many African American patients with asthma. There is evidence that suggests an increased prevalence of asthma in African Americans," [17, 18] said Professor Z to themselves defensively. "Also, I have spent 5 years teaching this subject and no one has ever told me this before. Perhaps I should meet with Toni and learn more from what she has to say. I wonder if other students have had the same thoughts in the past. I am glad Toni felt safe enough to email me."

Professor Z recognized the power imbalances and the differences in training years. With a cultural humility lens, Professor Z identified Toni's experiences and was open to hearing them. Professor Z was aware of their hierarchal position and took care to exude an egoless, approachable demeanor. Toni's concerns were addressed via video conference. Professor Z committed to researching Toni's concern and providing adequate rationale for future lectures. After the video conference, Professor Z reflected on their interactions with Toni. Professor Z learned a new perspective on a common topic they teach. Similarly, Toni reflected on how the communication went, considered the rationale given to her, and how it made her feel. Toni learned to ask questions in a way that continues to embrace curiosity in a positive learning environment. Soon after the encounter, Professor Z addressed and thanked the class for actively asking questions and inspiring them to be a lifelong learner. Cultural humility is the process in which Professor Z and Toni, and other teachers and students, will continuously learn from each other.

In this case, the professor approached the situation with a willingness to listen and learn from the student. The professor put their ego aside and understood that the student's comments and suggestions were not questioning their credibility as a professor but informing them of a potential area for growth. The professor showed self-awareness through their welcoming language and their commitment to further research the topic to expand their perspective on the matter. Similarly, Toni demonstrated self-awareness by choosing not to interrupt the lecture that was already falling behind schedule. Openness was exemplified when the professor attentively listened to Toni and validated her views. Supportive interactions were not explicitly included in this example but consisted of verbal and nonverbal communication skills that nurtured a welcoming environment for differing ideas and beliefs. The final attribute from cultural humility applied in this example was self-reflection. By using self-reflection, both the professor and the student were able to learn from the experience. Overall, utilizing a cultural humility approach created a positive learning atmosphere and enhanced the student-professor relationship.

4.4.2 Contrary Case

The following is an example of the same medical educator-student interaction without cultural humility.

Professor Z is teaching a subject in which race is attributed to an increased risk for disease burden. "Among the risk for asthma, being African American is one of them," [17, 18] said Professor Z.

Toni, a student in Professor Z's class, did not agree with a statement made by Professor Z nor with the way it was delivered, and she sought clarification. At first, Toni felt uncomfortable asking for clarification and providing a suggestion due to the perceived hierarchy in medical education and because the lecture was running behind schedule. However, Toni remembered that their medical school had emphasized DEI as core values for the university, thus Toni decided to raise her hand during lecture. "Professor Z, why did you mention African American race as a risk factor for asthma? I think that statement can be misleading because anyone living under elevated levels of environmental exposures can have increased risk for asthma. Race has nothing to do with it." "While I partially agree with you, Toni," said Professor Z, "what I am teaching you is based on evidence [17, 18]. We are running behind, Toni. We can discuss the root cause later," said Professor Z frustratedly.

Although Professor Z agreed with Toni in that social factors contribute to the risk for developing asthma, Professor Z is upset that Toni is not focusing on the evidence presented in the lecture. Instead, Professor Z believes Toni is focusing on undermining their expertise. Professor Z is confident in their knowledge of the subject since they have been teaching it for many years. Professor Z was busy and decided not to take the time to address the question with Toni after class. Toni feels defeated and is afraid that asking the question was detrimental to her relationship with Professor Z. Both Toni and Professor Z fail to follow up. Neither the professor nor the student reflects on their interactions with one another.

This case provides a contrast to the first example. In this contrary case, self-awareness was limited by both the student and professor. Toni could have chosen a better place and time to communicate her concerns to the professor. Similarly, the professor could have looked introspectively to assess their feelings at the time. Professor Z's openness to discuss a novel approach to their language when teaching REHD was also limited. This was reflected in their dismissive answer, which created a larger division between professor and student. Additionally, the lack of self-reflection, or intent to understand each other's differences, may have contributed to the lack of follow-up from both parties. A commitment to life-long learning and self-reflection could have opened the door to a fruitful professor-student relationship. After all, both Professor Z and Toni believed that social factors contribute to race-based risk factors.

While these examples serve to solidify the previously mentioned concepts, they are not exhaustive. The reader is encouraged to think about how cultural humility, and its five attributes, can be applied to their own experiences within their many identities, including interactions with administration, faculty, and students. Of note, Professor Z's diction in statements such as "Being African American is a risk for asthma" are not appropriate and reinforce the false idea that health disparities and pathology are innately linked to racial differences [19]. Chapter 5 discusses this concept in more detail. Cultural humility will become a fundamental catalyst in Professor Z's tool kit for addressing and best teaching REHD.

4.5 Conclusion

Although essential, teaching race and racism in medical education can be difficult to implement successfully. It requires combating challenges that are nuanced for their shift from traditional pedagogy [4]. The shift breaks away from conventional classroom dynamics, allowing for more conversations and emotional work. Due to everyone's individuality, many identities, voices, and experiences must be balanced within the confines of the classroom and institutional guidelines [4]. Furthermore, the teachings of race and racism are sensitive and emotionally charged topics that evoke responses that may be rooted within generations of learned behaviors or thought processes [5]. The potential for this turbulent atmosphere in the classroom can impede an individual's learning by causing hesitation and inaction from the medical educators when they consider discussing these important topics [5]. Confronting these unsettling potential problems can be done, and it starts with an understanding of cultural humility.

A cultural humility practice is proposed in this chapter as a model to mitigate these initial challenges and create a positive learning environment that transcends the classroom. Cultural humility is an effective method to improve physician-patient relationships and diminish REHDs [15]. Medical educators can benefit from utilizing cultural humility principles to prepare themselves and students in the classroom. For example, if a teacher is open and egoless with regard to changing definitions or teaching techniques, they can enhance interpersonal communication and the overall lesson. Although outside the scope of this chapter, integrating cultural humility into the curricula is essential for reducing REHDs [7]. In fact, UME is required to address the socio-cultural aspect of health in their curricula according to healthcare governing organizations worldwide, such as the WHO's Commission on Social Determinants of Health and the Liaison Committee on Medical Education [15, 21]. However, cultural humility is not widely taught in UME [22]. As cultural humility gains more acceptance and is more widely studied as an effective part of the curriculum for UME students, the medical educator can also learn from this model, which will enhance student learning. With a foundation in cultural humility, the medical educator may now approach each REHD with a lens that allows for interpersonal growth and a basis for life-long learning.

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Chapter 5
Best Practices and Strategies for Medical Educators to Acknowledge and Address REHD in Educational Materials

Sebastian Ramos, Kristoff Aragon, and Jacqueline M. Powell

5.1 Introduction

With the healthcare profession beginning to acknowledge the significant impact of systemic racism on health disparities, inequities, and bias [1], there is an urgent need for medical educators to not only focus on imparting biomedical knowledge and/or guiding clinical practice, but also on addressing racial and ethnic health inequity in their course content [2]. As such inequities derive from both practitioner bias and the structural racism inherent to the functioning design of healthcare institutions [3], the accepted misuse of race in medical teachings, whether implicitly or explicitly, has the detrimental ability to instill or reinforce implicit racial bias among future healthcare professionals, perpetuate cultural stereotypes, increase health inequities, and adversely affect patient outcomes.

Several studies highlighting the misuse of race presented in various preclinical courses found that educators often misrepresented race in their discussions, falsely correlated race with disease risk, promoted race-adjusted clinical guidelines, and encouraged student mastery of race-based science through assessments [3, 4, 5, 6]. This chapter will discuss these areas of racial misuse and provide evidence-based recommendations as to how medical educators may improve their educational materials to ensure accurate portrayals of race in medicine. At the end of each section,

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these recommendations are outlined in “Do” and “Do Not” tables followed by sample lecture slides that further illustrate these accurate and inaccurate portrayals of race in educational materials. Medical educators will be guided to consider the effects of socioeconomic differences, environmental influences, and institutional racism between population categories with regard to healthcare compliance and outcomes. By appropriately acknowledging and addressing REHD in their teaching materials, medical educators can help their students develop foundational competence in cultural humility, race-conscious medicine, and professional responsibility. The ultimate goal is to educate a healthcare workforce that consistently applies inclusive medical practices.

5.2 Understand the Impact of Race and Racism on Health Outcomes

The use of race in medical education and practice is pervasive. It shapes physician behavior, determines clinical guidelines, diagnoses, treatment plans, and dictates the very definition of disease [7]. As societal perceptions of race begin to evolve, it is essential for medical education and practice to reflectively comprehend the relationship between race, racism, and health and acknowledge it as the first step to accurately addressing race in the classroom [3].

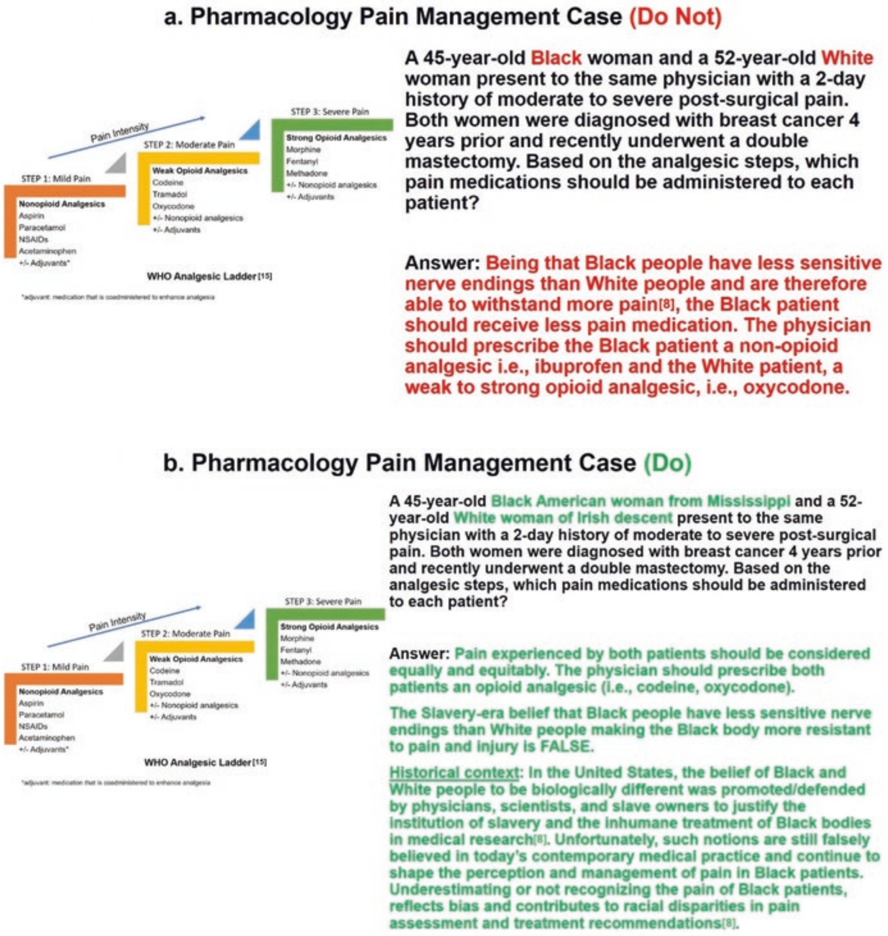
5.2.1 Do Accurately Identify Race as a Social Construct

As presented in Chap. 1 of this manual, race is not a biological or scientific construct based on innate genetic characteristics that produce health disparities, but a social one, born from racism. Although racial classifications have evolved, varying between cultures and societies worldwide, and have been defined by socio-political and historical ideas which reflect the impact of structural and social inequalities on health outcomes, race remains a proxy for biological difference [6] (Fig. 5.1a). For example, a study conducted by Hoffman et al. (2016) showed that approximately 50% of surveyed medical students and resident physicians falsely believed there to be true genetic differences between White and Black individuals [8]. Such beliefs included, “Black people aging more slowly than White people,” “Black people having a more sensitive sense of smell than White people,” “Black people feeling less pain than White people,” “Black people’s blood coagulating more quickly than White people’s blood,” “Black people having thicker skin than White people,” and

"White people having a more efficient respiratory system than Black people [8]." The large number of medical students and physicians who continue to hold and perpetuate the false belief that race is associated with biological differences highlights the deficiencies in medical education with respect to adequately addressing the topic of race in healthcare [8] (Fig. 5.1a). A study conducted by Tsai et al. (2016) examined content from 350 mandatory preclinical lectures and found that of the 102 slides that mentioned race, 38% explicitly associated race with biological differences while 58% implied this association [9]. It is imperative for medical educators and students to thoroughly analyze the concept of race and reflect on the social assumptions that influence the thoughts and beliefs about race and racial disparities on disease burden [3, 4, 10, 11] (Fig. 5.1b). It is also imperative for medical educators and students to understand that it is **racism**, not race, that influences social experiences, and which continues to be a key determinant of disproportionately negative health consequences [3, 4] (Fig. 5.1b). As instructional materials are presented, medical educators and students must be able to fully comprehend and distinguish between the concepts of **race**, a sociohistorical construct, **ethnicity**, which reflects culture and heritage, and **ancestry**, a construct defined by genetics [3, 5]. Although race and ethnicity do *correlate* with genetic ancestry, they should not serve as a proxy for ancestry [3, 12]. As there is no gene for race, it is ancestral alleles, not self- or socially ascribed ethnic or racial groupings, which are responsible for affecting disease prevalence and medication effectiveness [11–14].

Recommendations: [3–6]

Do not	Do
Use race as a proxy of genetic predisposition (Fig. 5.1a) Conflate race and ancestry	Understand the impact of race and racism on health outcomes (Fig. 5.1b) Accurately identify race as a social construct rather than a biological construct (Fig. 5.1b) Understand the distinction between race as socially constructed and ancestry as genetically defined Educate on the meaning and history of race, however described in varying parts of the world, and the underlying social assumptions that inform (Fig. 5.1b) Understand the impact of racism on health disparities (Fig. 5.1b) Identify racism, not race, in diagnosis, treatment plans, and as a key determinant of disease burden (Fig. 5.1b)



a. Pharmacology Pain Management Case (Do Not)

A 45-year-old Black woman and a 52-year-old White woman present to the same physician with a 2-day history of moderate to severe post-surgical pain. Both women were diagnosed with breast cancer 4 years prior and recently underwent a double mastectomy. Based on the analgesic steps, which pain medications should be administered to each patient?

Answer: Being that Black people have less sensitive nerve endings than White people and are therefore able to withstand more pain[8], the Black patient should receive less pain medication. The physician should prescribe the Black patient a non-opioid analgesic i.e., ibuprofen and the White patient, a weak to strong opioid analgesic, i.e., oxycodone.

b. Pharmacology Pain Management Case (Do)

A 45-year-old Black American woman from Mississippi and a 52-year-old White woman of Irish descent present to the same physician with a 2-day history of moderate to severe post-surgical pain. Both women were diagnosed with breast cancer 4 years prior and recently underwent a double mastectomy. Based on the analgesic steps, which pain medications should be administered to each patient?

Answer: Pain experienced by both patients should be considered equally and equitably. The physician should prescribe both patients an opioid analgesic (i.e., codeine, oxycodone).

The Slavery-era belief that Black people have less sensitive nerve endings than White people making the Black body more resistant to pain and injury is FALSE.

Historical context: In the United States, the belief of Black and White people to be biologically different was promoted/defended by physicians, scientists, and slave owners to justify the institution of slavery and the inhumane treatment of Black bodies in medical research[8]. Unfortunately, such notions are still falsely believed in today's contemporary medical practice and continue to shape the perception and management of pain in Black patients. Underestimating or not recognizing the pain of Black patients, reflects bias and contributes to racial disparities in pain assessment and treatment recommendations[8].

Fig. 5.1 **The construct of race and historical context of disease burden.** (**a**) Inaccurately using race as a proxy of genetic predisposition; inappropriately referencing colonialism/slavery-era research to support racial inferiority; inaccurately implicating genetic variations as the cause of disease burden. (**b**) Accurately identifying race as a social construct; rightfully acknowledging historical context and the impact of slavery and systemic racism and discrimination on disease burden and health inequities

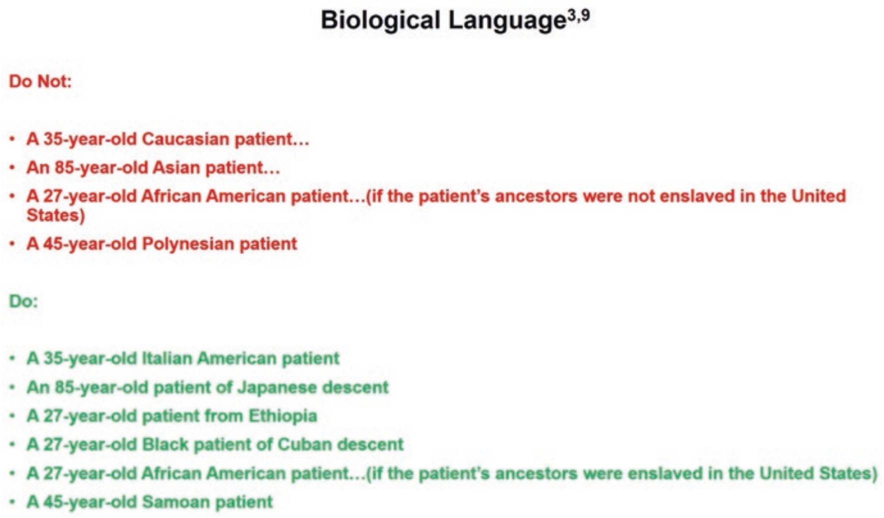
5.2.2 Do Use the Correct Biological Language

The choice of specific language to articulate an idea or concept can encourage shared understanding, however, it may also spread misinformation, perpetuate implicit biases, cultural stereotypes, and false conclusions that engender racial and ethnic disparities in quality health care [3].

In discussing race and health disparities, it is important to use language that is specific, inclusive, and accurately conveys true biological differences and genetic ancestry between ethnic groups (Fig. 5.2). Several studies found that outdated socialized racial classifications such as Caucasian, African American, and Asian were often used indiscriminately in lecture as an imprecise way to denote biological information (Fig. 5.2). For example, the term "African American" is commonly used to describe all persons who are Black without the understanding that "African American" is a sociopolitical identity for Black people whose African ancestors were enslaved in the United States [3]. Broad use of this term disregards Black people who may have directly immigrated from Africa, the Middle East, Latin/South America, and/or the Caribbean [9]. As such, the term "Black" is used to describe the black skin phenotype which includes persons of all geographic backgrounds and nationalities [9]. Additionally, while "Caucasian" is used to describe a white-skinned person of European origin and "Asian" is used to describe persons from the continent of Asia, each continent is composed of several distinct and diverse countries, each with differing genetic traits. These non-biologic terms tend to discount geography as they often group all persons from the northern, southern, eastern, and western regions of the continent despite the considerable genetic differences and predisposition to disease among these populations [3]. With this distinction, racial groupings cannot be considered genetically homogeneous. For instance, due to the forced mixing of races throughout the course of slavery, there was the integration of West African and European genes in North America but the integration of West African and Indigenous genes in South America [11, 16]. Additionally, with ensuing emigration from and immigration to varying nations, the mixing of ancestries thus highlights the genetic variability that exists within, rather than between, ethnic groups [17]. These nebulous terms do not account for the nuances of racial identity, such as mixed ancestry, genetic heterogeneity, or social geography, nor do they represent distinct biological groups; as such, these terms do not provide for identity completeness [3, 9, 18]. Therefore, the National Academy of Medicine recommends utilizing a combined question to describe race and ethnicity, while also using the country of origin to describe ancestry [3]. Obtaining racial, ethnic, and ancestral information would prove essential in gaining a more holistic understanding of a patient's identity.

Recommendations: [3]

Do not	Do
Use incorrect, outdated, non-biologic terms such as Asian, African American, or Caucasian, to describe lineage or determine biologic susceptibility to disease (Fig. 5.2)	Understand that genetic variability exists within, rather than between, racial and ethnic groups Use ancestral descent/country of origin when determining genetic susceptibility to disease (Fig. 5.2) Use a combination of race and ethnicity when formatting multiple-choice survey responses, i.e., Black or African American, Asian American and Pacific Islander, Hispanic or Latinx, Native American or Inuit, in addition to an open-ended question regarding ancestry Obtain racial, ethnic, and ancestry information for a holistic understanding of patient identity (Fig. 5.2)



Biological Language[3,9]

Do Not:

- A 35-year-old Caucasian patient…
- An 85-year-old Asian patient…
- A 27-year-old African American patient…(if the patient's ancestors were not enslaved in the United States)
- A 45-year-old Polynesian patient

Do:

- A 35-year-old Italian American patient
- An 85-year-old patient of Japanese descent
- A 27-year-old patient from Ethiopia
- A 27-year-old Black patient of Cuban descent
- A 27-year-old African American patient…(if the patient's ancestors were enslaved in the United States)
- A 45-year-old Samoan patient

Fig. 5.2 **Biological language.** (**a**) Imprecisely using non-biologic terms to determine lineage or susceptibility to disease. (**b**) Accurately using ancestral descent or country of origin to convey true biological differences and genetic ancestry between ethnic groups

5.3 Contextualize Racial and Ethnic Differences

Medical educators and practitioners continue to hold misguided assumptions that common health disparities result from genetic predisposition. Particular races are often associated with specific diseases and racial and ethnic differences in the burden of disease are more often presented without the provision of any historical or social context [3, 4]. This encourages students to associate these differences exclusively with genetics rather than considering the contributions of structural and/or social determinants of health (SDOH). The study conducted by Tsai et al. (2016) showed only 4% of the 120 slides that mentioned race acknowledged social determinants on racialized disease burdens [9]. However, with the increasing awareness of racial and ethnic disparities in healthcare, medical students are realizing the importance of, and the need for, context. This was demonstrated on the course evaluation for the Hematologic/Lymphatic II course at our medical institution, Rocky Vista University. Students were asked to “cite specific examples of the absence or presence of inclusive language, implicit bias, microaggressions, or other expressions of diversity, equity, and inclusivity” and students specifically requested that context be provided for racial, ethnic, or other socioeconomic disparities discussed in-class sessions. For instance, “Only mention of racial/ethnic diversity was in stats or just as statements without any context, i.e., “more African Americans have sickle cell,“ “black people get multiple myeloma,” “Mediterranean and Arabic people have more severe G6PD deficiency," "Asians have alpha thalassemia" etc. without any contextualization," and "Why are all alcoholics suffering from macrocytic anemia homeless?" [19].

Ensuring that students receive educational materials that accurately acknowledge historical, social and structural factors contributing to disease will be paramount in eliminating bias that pathologizes racial and ethnic minorities and adversely informs clinical care [3].

5.3.1 Do Provide Historical Context to Disease Burden

Although medical education often highlights medical history, due to time or curricular restraints, instructors rarely discuss this medical history in a broader historical and/or social context [5]. For instance, teaching students that Black Americans are likely to have a higher diagnosis rate of mental illness without discussing the unaddressed trauma and violence that impacts the emotional and mental health of the Black population [20].

When disproportionate burdens of disease are presented, such as the increased prevalence of hypertension in people of African descent, or obesity and nutrition-related chronic diseases (diabetes, cancer, heart disease) in Native and Indigenous populations worldwide [21–23], presentations often reference research dating back to colonialism and slavery that supports a racial inferiority that is innately pathological by falsely implicating genetic variations as the cause of disease burden rather than acknowledging major historical contributions [11] (Fig. 5.1a). For instance, the "Slavery Hypertension Hypothesis" theorizes that a gene favoring salt retention enhanced the enslaved Africans' survival of the Middle Passage, and the evolution of this genetic mutation is the underlying cause of increased salt-sensitivity in African Americans, increasing the rates of hypertension and heart disease to be higher than White Americans [11]. However, in addition to reports showing that no current or contemporary West African populations suffer rampant hypertension, pathophysiological and historical studies suggest that the difference in salt-sensitivity between African Americans and White Americans is significantly smaller than what the Slavery Hypertension Hypothesis suggests [4]. Despite this, the American Heart Association website currently states, "Researchers have also found that there may be a gene that makes African Americans much more salt sensitive [11, 24]." There has been no consideration of the psychological stressors, such as those resulting from the horrific abuse of slavery, the ensuing systemic racism imposed by laws enforcing racial segregation in the Southern United States, or institutional policies that have promoted impoverished, segregated, neighborhoods with limited access to nutritious foods, higher exposure to environmental toxins, decreased access to quality healthcare, and increased rates of violence and incarceration within the Black community, effecting these consequential physical outcomes of disease [25–27].

Additionally, Pacific Island populations are believed to have a “thrifty gene” that historically predisposed them to storing nutritional elements from scarce food sources to survive, but which is now deemed responsible for increasing BMI and contributing to increased rates of obesity [28]. Similarly, Native and Indigenous populations worldwide are also said to have a higher disease burden of obesity, diabetes, and heart disease [21]. The disruption of native lifestyles, through the colonial removal of ancestral lands, the replacement of traditional food systems involving hunting, gathering, fishing, and farming with high caloric diets with poor nutritional value [21–29], and limited financial opportunities are key historical determinants of health that have affected increased nutrition-related disease burden. In countries such as Malaysia and Chile, Indigenous populations who have maintained traditional lifestyle patterns show relatively low prevalence rates of obesity and nutrition-related disease [23, 30]. The impact of structural racism is evident, but rarely referenced during discussions of race-based disease risk. This lack of context trains students to attribute this burden of disease to biological predisposition, ultimately misguiding clinical care [3].

Overall, marginalized racial and ethnic populations have been significantly shaped by colonialism, slavery, and global forces of economic and social change, and the implementation of discriminatory policies and imposed changes in lifestyle have perpetuated intergenerational harm to health outcomes [31]. Without providing historical or social context, erroneous and misguided assertions of biological predispositions may support or instill a bias that exclusively associates racial and ethnic minorities with disease burden and detrimentally informs clinical care (Fig. 5.1a).

Recommendations: [3–5]

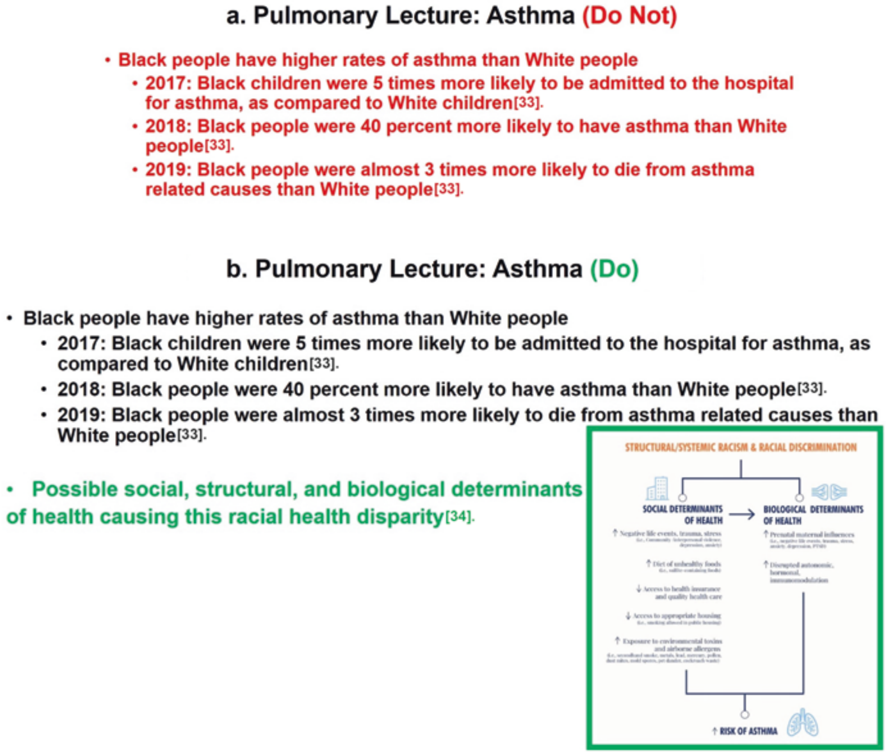
Do not	Do
Reference research dating back to colonialism and slavery that supports racial inferiority and falsely implicates genetic variations as the cause of disease burden rather than acknowledging major historical contributions (Fig. 5.1a)	Discuss racial and ethnic differences on disease burdens within a contextual framework (Fig. 5.1b) Discuss medical history in a broader historical and/or social context (Fig. 5.1b) Incorporate historical examples that emphasize the complex and oppressive history of colonialism and slavery (Fig. 5.1b) Acknowledge and emphasize the impact of slavery/colonialism and systemic racism/discrimination on disease burden and health inequities (Fig. 5.1b)

5.3.2 Do Acknowledge Structural and Social Determinants of Disease Burden

Most often, educators will allude to poor health outcomes for minoritized patients without referencing structural and social effects of racism on long-term disparate health consequences [26] (Fig. 5.3a). For instance, teaching students that Black patients have a decreased life expectancy without discussing the lack of access to health insurance coverage and/or quality healthcare [3]; or how youth from marginalized communities have a higher diagnosis rate for attention deficit hyperactivity disorder and behavioral issues without addressing maternal-fetal complications, child abuse and neglect, low socioeconomic status, and exposure to environmental toxins, such as lead [25, 32]. The most widespread example would include that of the recent global COVID-19 pandemic, which has exposed glaring health disparities particularly in Black and Brown communities. Social and economic disparities, rather than genetic predisposition, have increased the prevalence of coronavirus infection among Black and Hispanic populations [26], and presenting the disproportionate burden of COVID-19 without drawing attention to discriminatory socioeconomic inequalities tends to pathologize the Black and Brown populations and reinforce the view that this health disparity is a resultant of innate racial differences [26]. Marginalized racial and ethnic populations are disproportionately more likely to experience homelessness or live in impoverished, densely populated areas, and/or in multigenerational households; have limited access to nutritious and affordable foods; be exposed to toxic environmental pollution; hold essential jobs requiring continuous public interaction; lack adequate health insurance coverage and/or access to quality, culturally-responsive, medical care; have higher rates of incarceration with inmates unable to effectively physically distance so as to reduce transmission of the virus; and be disproportionately diagnosed with underlying chronic conditions such as asthma, hypertension, and diabetes that exacerbate COVID-19 vulnerabilities [26]. Having medical educators distinctly outline the relationship between SDOH and subsequent health disparities will provide students a more well-defined understanding of race in medicine (Fig. 5.3b).

Recommendations: [3–5]

Do not	Do
Educate students to attribute disproportionate burden of disease in minoritized populations exclusively to biological/genetic predisposition (Fig. 5.3a)	Acknowledge the relationship between SDOH and subsequent health disparities (Fig. 5.3b) Address the structural, social, economic, political, environmental, and biological factors that might contribute to the unequal prevalence of disease in a specific population (Fig. 5.3b)



a. Pulmonary Lecture: Asthma (Do Not)

- Black people have higher rates of asthma than White people
    - 2017: Black children were 5 times more likely to be admitted to the hospital for asthma, as compared to White children[33].
    - 2018: Black people were 40 percent more likely to have asthma than White people[33].
    - 2019: Black people were almost 3 times more likely to die from asthma related causes than White people[33].

b. Pulmonary Lecture: Asthma (Do)

- Black people have higher rates of asthma than White people
    - 2017: Black children were 5 times more likely to be admitted to the hospital for asthma, as compared to White children[33].
    - 2018: Black people were 40 percent more likely to have asthma than White people[33].
    - 2019: Black people were almost 3 times more likely to die from asthma related causes than White people[33].
- Possible social, structural, and biological determinants of health causing this racial health disparity[34].

Fig. 5.3 **Structural and social determinants of disease burden.** (**a**) Exclusively attributing disproportionate burdens of disease in minoritized populations to genetic predisposition. (**b**) Accurately including social and biological determinants of health that could contribute to the unequal prevalence of disease in a specific population

5.4 Race Is Not an Epidemiological Determinant for Disease Risk, Diagnosis, and/or Treatment

Racial categories have often been regarded as an epidemiological determinant for disease risk, diagnosis, and treatment. Tsai et al. (2016) found that of the 102 preclinical lecture slides that mentioned race, 50% associated race and epidemiology without providing any social or historical context [9]. Of that 50%, 42% portrayed race as a disease risk, diagnostic or treatment factor and 2% as an indicator for racially adjusted physiological measurements in race-based clinical guidelines and diagnostic algorithms [9]. It is imperative that medical educators ensure the contextual presentation of epidemiological data that may strongly support the association of disease risk and race so as to avoid perpetuating race as an underlying biological cause [9].

5.4.1 Do Not Pathologize Race

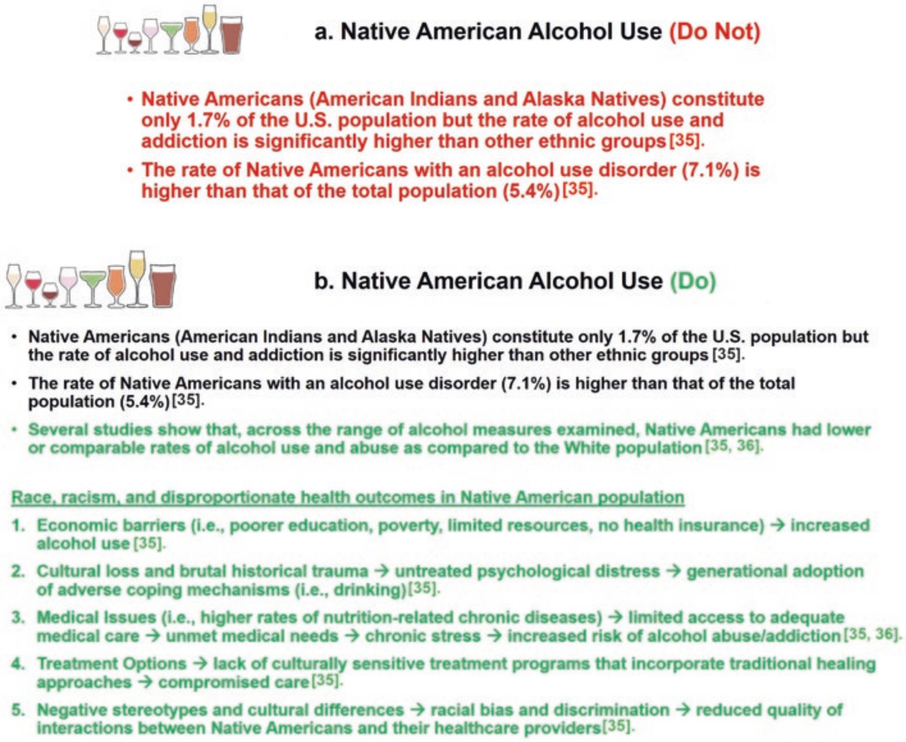
In addition to connecting certain races and ethnicities to specific diseases, Amutah et al. (2021) found that medical educators tended to routinely pathologize race by exclusively emphasizing the association of marginalized racial and ethnic groups with higher disease burden [3] (Fig. 5.4a). For example, findings from a 2018 National Survey on Drug Use and Health concluded that, "the rate of Native Americans with an alcohol use disorder (7.1%) is higher than that of the total population (5.4%)" [35] (Fig. 5.4a). However, several studies show that, across the range of alcohol measures examined, Native Americans had lower or comparable rates of alcohol use and abuse as compared to the White population [35, 36] (Fig. 5.4b). In addition to the association of race and increased disease risk, poorer health outcomes are often described for minority patients in ways that suggest erroneous innate traits that heightens chances of disease burden and death [3]. Bedolla et al. (2020) discuss a lecture series on ophthalmological diseases in which it is quoted:

> "The professor listed "black race" as a leading risk factor for glaucoma and as a patient attribute that should prompt referral to specialist care. In contrast, when describing age-related macular degeneration, the professor did not pathologize "White race" as a cause of disease but mentioned that macular degeneration was more commonly seen in White patients. The professor then reinforced the false equivalence of race and genetics by telling students that genes linked to the development of certain ophthalmological diseases were "highly race dependent."" [5]

Portraying minoritized populations as high-risk without referencing research that addresses the relationships between race, racism, and health outcomes reinforces the false idea of health disparities and pathology being innately linked with racial differences [3] (Fig. 5.4a). This creates stigma and further contributes to inferior treatment of minoritized patients [3]. If medical students are to truly comprehend the concept of health inequity and its implications, the roles of systemic racism (i.e., housing and banking policies) and racial discrimination on disease burden and disproportionate health outcomes must be addressed [37] (Fig. 5.4b).

Recommendations: [3]

Do not	Do
Racialize disease by solely describing poorer health outcomes for minoritized populations (Fig. 5.4a) Exclusively emphasize the association of marginalized racial and ethnic groups with higher disease burden (Fig. 5.4a) Stigmatize or reinforce the idea of health disparities and pathology being innately linked with racial difference (Fig. 5.4a)	Acknowledge the inappropriate use of language to describe innate traits in minoritized populations as increased risks to disease burden and mortality (Fig. 5.4b) Address the relationship between race, racism and disproportionate health outcomes in marginalized racial and ethnic populations (Fig. 5.4b) Address the role of systemic racism and discriminatory practices on disease burden and health inequity (Fig. 5.4b) Present research supporting the effects of racism on health outcomes and its implications for minoritized populations (Fig. 5.4b) Always consider the effects of socioeconomic differences, environmental influences, and institutional racism between population categories with regards to healthcare compliance and outcomes (Fig. 5.4b)



a. Native American Alcohol Use (Do Not)

- Native Americans (American Indians and Alaska Natives) constitute only 1.7% of the U.S. population but the rate of alcohol use and addiction is significantly higher than other ethnic groups [35].
- The rate of Native Americans with an alcohol use disorder (7.1%) is higher than that of the total population (5.4%) [35].

b. Native American Alcohol Use (Do)

- Native Americans (American Indians and Alaska Natives) constitute only 1.7% of the U.S. population but the rate of alcohol use and addiction is significantly higher than other ethnic groups [35].
- The rate of Native Americans with an alcohol use disorder (7.1%) is higher than that of the total population (5.4%) [35].
- Several studies show that, across the range of alcohol measures examined, Native Americans had lower or comparable rates of alcohol use and abuse as compared to the White population [35, 36].

Race, racism, and disproportionate health outcomes in Native American population

1. Economic barriers (i.e., poorer education, poverty, limited resources, no health insurance) → increased alcohol use [35].
2. Cultural loss and brutal historical trauma → untreated psychological distress → generational adoption of adverse coping mechanisms (i.e., drinking) [35].
3. Medical Issues (i.e., higher rates of nutrition-related chronic diseases) → limited access to adequate medical care → unmet medical needs → chronic stress → increased risk of alcohol abuse/addiction [35, 36].
4. Treatment Options → lack of culturally sensitive treatment programs that incorporate traditional healing approaches → compromised care [35].
5. Negative stereotypes and cultural differences → racial bias and discrimination → reduced quality of interactions between Native Americans and their healthcare providers [35].

Fig. 5.4 Pathologizing race. (**a**) Inappropriately racializing disease by solely emphasizing the association of marginalized racial and ethnic groups with higher disease burden and poorer health outcomes; inaccurately reinforcing the idea of health disparities and pathology being innately linked with racial difference. (**b**) Appropriately addressing the role of systemic racism and racial discrimination on disproportionate health outcomes in marginalized racial and ethnic populations; accurately presenting research that considers the effects of socioeconomic differences, environmental influences, and institutional racism between population categories with regards to healthcare compliance and outcomes

5.4.2 Do Not Use Race as a Risk Factor

When researching certain diseases in textbooks or online resources, race or ethnicity will most noticeably be listed as a risk factor prompting race to be regarded as an essential element of epidemiology, disease risk, diagnosis, and treatment and consequently an underlying biological cause [9]. However, cultural and genetic influences along with environmental, psychological, social, behavioral and medical factors can invariably increase the burden of disease regardless of race [9]. Medical resources, educators, and even assessments worldwide will often present epidemiological data that may strongly support the association of disease risk and race without addressing the correlation of these other variables that may predispose a certain population to a specific disease [3, 5] (Fig. 5.5a). For instance, students are often taught that sickle cell disease (SCD) only affects the African or African American population. The best-selling Pathology textbook for medical students, *Robbins and Cotran Pathologic Basis of Disease (Kumar V, Abbas AK, and Aster JC, eds., ninth Ed, 2015, Copyright Elsevier, used with permission)*, presents this epidemiological look at SCD:

> "About 8% to 10% of African Americans, or roughly 2 million individuals, are heterozygous for HbS…There are about 70,000 individuals with sickle cell disease in the United States. In certain populations of Africa, the prevalence of heterozygosity is as high as 30%" [38].

Additionally, a continuing education activity designed to evaluate the management and advance the treatment of SCD offers the following information: "Sickle cell disease is a multisystem disorder and the most common genetic disease in the United States, affecting 1 in 500 African Americans." [39]

The statements mentioned above racialize African Americans as being the only population susceptible to contracting SCD. In reality, the sickle cell trait originated as an adaptive response to malaria and the disease is therefore endemic in all populations at risk for malaria, including those of Sub-Saharan African, Caribbean, Central/South American, South/Southeastern Asian, Middle Eastern, and Mediterranean descent [39] (Fig. 5.5b). The notion of malaria solely being contracted on the continent of Africa is further reinforced in a variety of medical licensing exam question banks worldwide, including the United States Medical Licensing Examination (USMLE) and the Hong Kong Medical Licensing Examination (HKMLE) as illustrated by the following question quoted from the HKMLE 'Proficiency in Medical English' sample test:

> "Mr. James Smith is a 45-year-old male. He has been working in Hong Kong with a financial company for 9 years…He has a 2-day history of fever, headache, muscle pain and flu-like symptoms. He recently returned from a safari holiday in East Africa. He has visited his General Practitioner once and been prescribed Panadol. He now attends the Accident and Emergency Department with complaints of persisting fever and increasing headache. On examination, he appears very unwell; his temperature is 39.5°C, heart rate is 110 per minute and respiratory rate is 18 per minute…You receive the attached laboratory result during the evening of his admission…Thick blood smear showed: Thick Blood Smear: – Plasmodium falciparum" [40].

With travels to East Africa and the presence of the unicellular protozoan parasite, *Plasmodium falciparum*, which causes malaria in humans, this question indicates the continent of Africa as a disease risk for contracting malaria.

With regards to the USMLE, Ripp and Braun [10] analyzed the use of race and/or ethnicity in all 2211 questions in a question bank used for Step 1 of the USMLE and found that of the questions that used the term 'African

Americans' approximately 25% were focused on SCD, such as the question stems quoted below from *USMLE Step 1 Pathology PreTest Self-Assessment and Review, tenth Ed. (Brown EJ, tenth Ed, 2002, Copyright McGraw-Hill, used with permission)* and the *National Board of Medical Examiners (NBME) of the United States of America: Subject Examinations Content Outlines and Sample Items*, respectively.

> "A 22-year-old African American male wants to know if he has sickle cell trait. He has no previous history of the signs or symptoms of sickle cell anemia. What laboratory method or test can be used to detect the presence of hemoglobin S?
>
> a. Coombs' test
> b. Metabisulfite test
> c. Osmotic fragility test
> d. Schilling test
> e. Sucrose hemolysis test." [41]

> "Two days after beginning primaquine for malaria prophylaxis, a 17-year-old African American boy is brought to the physician because of dark urine and yellowing of his eyes. His pulse is 88/min, respirations are 12/min, and blood pressure is 124/68 mm Hg. Examination shows scleral icterus and pale mucous membranes. His hemoglobin concentration is 10 g/dL. A blood smear shows erythrocyte fragments and Heinz bodies. Which of the following is the most likely explanation for these findings?
>
> (A) Decreased porphobilinogen deaminase activity.
> (B) Decreased production of β-globin chains.
> (C) Deficiency of glucose 6-phosphate dehydrogenase.
> (D) Deficiency of glycosylphosphatidylinositol.
> (E) Fragmentation of erythrocytes by fibrin strands." [42]

(Used with permission from the National Board of Medical Examiners)

The correct answer to the second question is (C), "deficiency of glucose 6-phosphate dehydrogenase" as "exposure to oxidant drugs, such as the antimalarial drug, primaquine, denatures hemoglobin, precipitating erythrocytes as Heinz bodies" [41]. The two X-linked variants are the Mediterranean type and the A type variant which is found in 10% of African Americans and causes the majority of G6PD deficiency cases in Africa [41, 43].

Once again, having test questions commonly associate malaria with either the African continent or African American people implies the parasitic disease to be race-specific [10]. Additionally, Ripp and Braun [10] found both G6PD deficiency and sarcoidosis, a multisystem inflammatory disease, to be frequently mentioned in association with Black, African, Caribbean, and/or African American populations despite a broad global distribution, most predominantly in Mediterranean and northern European countries, respectively [10, 44]. This was again evidenced in the following question included in a practice question bank for the Professional and Linguistic Assessments Board (PLAB) test, an examination used to assess the qualifications of doctors trained abroad to practice medicine in the United Kingdom:

> “A 34yo African-Caribbean man with a hx of sarcoidosis has presented with bilateral kidney stones. What is the most likely cause for this pt’s stones?
>
> a. Hypercalcemia
> b. Hyperuricemia
> c. Diet
> d. Recurrent UTIs
> e. Hyperparathyroidism

The correct answer is “a.” (sarcoidosis causes hypercalcemia/hypercalciuria due to vitamin D activation by granulomas) [45].” In this example, the term ‘African-Caribbean’ is used as a diagnostic clue.

Black and African American populations are not the only patient groups inaccurately associated with disease risk. Cystic fibrosis, a single gene disorder, was most often associated with White people, while lactase deficiency was most commonly linked with people of East Asian descent despite this genetic disease also being prevalent in people of West African, Middle Eastern, Jewish, Greek, and Italian descent [10, 46]. A study by Lang (2005) found incidences of lactose intolerance to be more prevalent in countries with lower latitudes and higher temperatures, especially in countries where maintaining dairy herds safely and economically proved more difficult [47]. Rather than associating lactase deficiency with race and ethnicity, this study provides evidence of both geographical and environmental impacts on this disorder.

Educating healthcare students to assign race as a risk factor and promote the association of certain genetic diseases with certain races directly misinforms clinical care [3–5] (Fig. 5.5a). This encourages healthcare providers to oversimplify clinical reasoning as well as overlook structural and SDOH that may serve as the underlying cause of disease burden. Additionally, it may also perpetuate missed diagnoses in patients of racial and ethnic groups not traditionally considered as “risk factors [3–5].” For instance, hemochromatosis and thalassemia may be mis- or underdiagnosed in Black individuals being that those diseases are considered to mainly affect White people and persons of Mediterranean descent, respectively [3, 4, 5, 48, 49]. The exclusive association of race and/or ethnicity with disease as illustrated in the examples above not only reinforces the concept of particular genetic variations being specific to particular racial groups but also implies genetics to be more important than the impact of social or environmental factors on disease burden in marginalized racial and ethnic groups [10] (Fig. 5.5b).

Lastly, as quoted in Chadha et al. (2020), “A study question tweeted by the American College of Obstetricians and Gynecologists (@ACOGAction) reads:

> A 33-year-old married African American woman comes to your office and admits to thoughts of suicide for the last month. She was previously diagnosed with bipolar disorder but has never attempted suicide before. Which of the following characteristics is associated with an elevated epidemiological risk for suicide?
>
> A. Age < 35.
> B. Bipolar disorder.
> C. Lower socioeconomic status.
> D. Being married.
> E. Black race."[4, 50]

The correct answer is “B, bipolar disorder.” The inclusion of option E, “Black race” as an answer choice detrimentally reinforces the training of learners to classify conditions and rely on the “false assumption that race is an epidemiological risk factor for various pathologies [4].”

As evinced by the following question included in *USMLE Step 1 Pathology PreTest Self-Assessment and Review, 12th Ed. (Brown EJ, 12th Ed, 2010, Copyright McGraw-Hill, used with permission)*, it is more appropriate to acknowledge cultural, regional, and genetic influences along with geographical factors that can affect the burden of disease regardless of race [9].

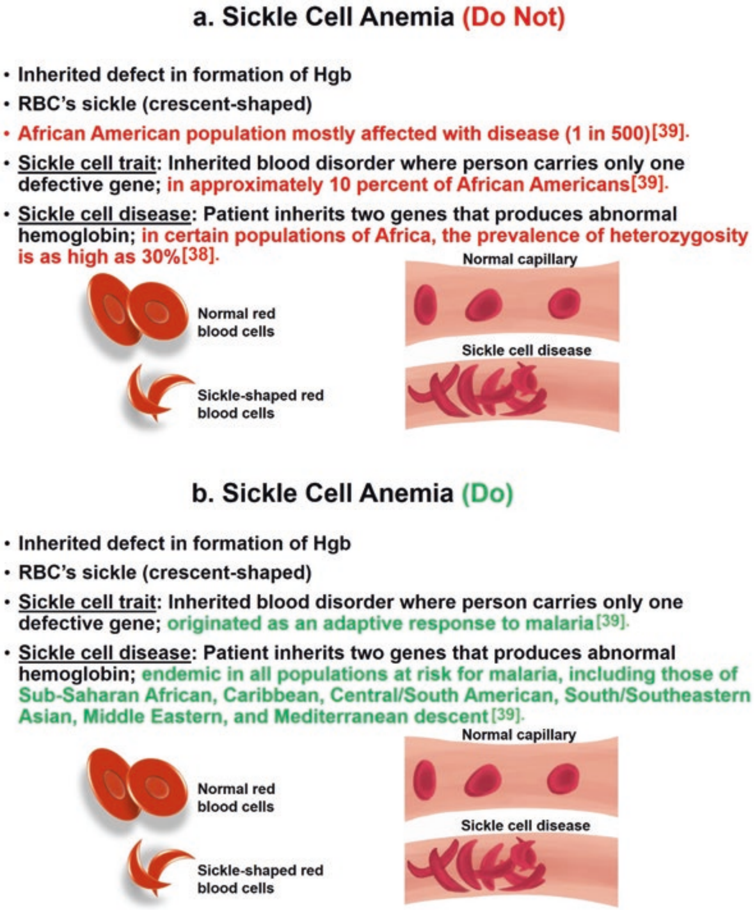
> “A 46-year-old woman who lives in Southern Japan develops a diffuse, rapidly spreading rash. Workup finds hypercalcemia along with a mediastinal mass. Examination of the peripheral smear reveals numerous multilobated lymphocytes. These same cells are present in histologic sections taken from a biopsy of the mediastinal mass. Based on these clinical findings the diagnosis of adult T-cell leukemia/lymphoma (ATLL) is made. Which of the following statements is an important predisposing factor involved in the pathogenesis of this malignancy?
>
> a. Exposure to beta-naphthylamine
> b. Exposure to ionizing gamma radiation
> c. Infection with a mutated hepadnavirus
> d. Infection with a retrovirus
> e. Mutations of the ras oncogene

The answer is d. This retrovirus is the causative agent of adult T-cell leukemia/lymphoma, which is a type of malignancy that is endemic in Southern Japan and the Caribbean” [51].

By correlating predisposition to disease (i.e., adult T-cell leukemia/lymphoma) with specific geographical locations (i.e., Southern Japan) and regional genetic differences rather than by race (i.e. Asian), consideration of these variables aptly reduces the categorization of race as an epidemiological component and disease risk factor.

Recommendations: [3–5]

Do not	Do
Racialize disease (Fig. 5.5a) Associate specific racial groups with specific diseases without correlating structural or social variables that contribute to the unequal prevalence of disease in a particular population (Fig. 5.5a) Reinforce genetic variations as being more important than social or environmental factors on REHD (Fig. 5.5a) List race as a risk factor and categorize it as an epidemiological component (Fig. 5.5a)	Use evidential literature to substantiate epidemiological data that may strongly support the association of disease risk and race Consider and correlate the structural, social, socioeconomic, political, environmental, geographical, cultural, and genetic variables that may predispose a certain population to a specific disease (Fig. 5.5b)



a. Sickle Cell Anemia (Do Not)

- Inherited defect in formation of Hgb
- RBC's sickle (crescent-shaped)
- African American population mostly affected with disease (1 in 500)[39].
- Sickle cell trait: Inherited blood disorder where person carries only one defective gene; in approximately 10 percent of African Americans[39].
- Sickle cell disease: Patient inherits two genes that produces abnormal hemoglobin; in certain populations of Africa, the prevalence of heterozygosity is as high as 30%[38].

b. Sickle Cell Anemia (Do)

- Inherited defect in formation of Hgb
- RBC's sickle (crescent-shaped)
- Sickle cell trait: Inherited blood disorder where person carries only one defective gene; originated as an adaptive response to malaria[39].
- Sickle cell disease: Patient inherits two genes that produces abnormal hemoglobin; endemic in all populations at risk for malaria, including those of Sub-Saharan African, Caribbean, Central/South American, South/Southeastern Asian, Middle Eastern, and Mediterranean descent[39].

Fig. 5.5 Race as a risk factor. (**a**) Inaccurately listing race as a risk factor and associating specific racial groups with specific diseases without correlating structural or social variables that contribute to the unequal prevalence of disease in a particular population. (**b**) Accurately correlating the structural, social, socioeconomic, political, environmental, and genetic variables that may predispose a certain population to a specific disease

5.4.3 Do Not Use Race as a Shortcut or Hint for Clinical Thinking in Assessments and Diagnosis

In medical education curricula, assessments often include multiple-choice questions that rely on the use of hints, buzz words, cues, and associations to facilitate problem-solving and encourage quick thinking [17]. With educators propagating the disparate association of distinct racial groups with specific genetic diseases and reinforcing the notion of race as an epidemiological risk factor, it is not surprising that those presented relationships then encourage the use of racial assumptions as a clue or mental shortcut in choosing the "best" or "most correct" answer choice on an assessment (Fig. 5.6a). Racial, ethnic, and/or ancestral descent references are often included in learning objectives as well as in the stem, answer choices, or explanation of assessment items [10]. Unfortunately, racial shortcuts are commonly embedded in questions created for course assessments, national licensure examinations, examination preparatory materials, and practice question banks, and students are often rewarded for determining the best answer by recognizing these racial associations [5]. The subsequent examples illustrate the pervasive nature of these harmful practices worldwide and among various healthcare professions. The following was a "recall question" included in the *Medical Technology Board Exam Compilation* attributed to Notre Dame of Marbel University in the Philippines on a web portal for student user-submitted study resources:

> "Anti-U is
>
> a. most common antibody in the MNSsu system.
> b. found only in black individuals.
> c. naturally occurring antibody.
> d. named "U" for Uruguay." [52].

The correct answer highlighted was "b, found only in black individuals [52]." Despite Rana et al. (2011) stating that, "this rare red cell alloantibody is exclusively found in Africans," no explanation as to specifically how or why "these antibody producers are always Black patients" was provided [53]. A pathological relationship has never been able to be established [54], yet this question is used to train student test-takers to recall information taught as fact from memory. Another example is directly quoted from *USMLE Step 1 Pathology PreTest Self-Assessment and Review, tenth Ed. (Brown EJ, tenth Ed, 2002, Copyright McGraw-Hill, used with permission):*

> "A 24-year-old African American female presents with nonspecific symptoms including fever and malaise. A chest x-ray reveals enlarged hilar lymph nodes ("potato nodes"), while her serum calcium level is found to be elevated. Which of the following histologic abnormalities is most likely to be seen in biopsy specimens from these enlarged hilar lymph nodes?
>
> a. Caseating granulomas
> b. Dense, granular, PAS-positive, eosinophilic material
> c. Markedly enlarged epithelial cells with intranuclear inclusions
> d. Noncaseating granulomas
> e. Numerous neutrophils with fibrin deposition." [41]

The answer is "d, Noncaseating granulomas," which are manifestations of sarcoidosis [41]. Here again, the term 'African American' is racially associated with and used as a diagnostic hint to identify sarcoidosis.

The following two questions were listed in the U.K. PLAB practice question bank:

> "A pt. from Africa comes with a nodular patch on the shin which is reddish brown. What is the most probable dx?
>
> a. Lupus vulgaris
> b. Erythema nodosum
> c. Pyoderma gangrenosum
> d. Erythema marginatum
> e. Solar keratosis" [45]

The answer is "b, as Lofgrens syndrome of Sarcoidosis is more prevalent in Africans (erythema nodosum, bilateral hilar lymphadenopathy, arthropathy) other causes include TB which is also prevalent in parts of Africa [45]."

> "A 46yo African-Caribbean man is found to have BP=160/90mmHg on 3 separate occasions. What is the best initial tx?
>
> a. ACEi
> b. Beta-blockers
> c. ARBs
> d. None
> e. CCB

The key is 'e, CCB.' [If age less than 55 years but Afro-Caribbean origin then CCB] [45]." The patient's Afro-Caribbean ethnicity is being used as a guide for selecting antihypertensive treatment.

The following question was published in the *NBME of the United States of America: Subject Examinations Content Outlines and Sample Items*:

> "A 12-year-old African American boy is brought to the physician by his mother because of a swollen right earlobe for 3 weeks. He had the ear pierced at a local mall 6 weeks ago. The swelling has persisted despite removal of the earring 3 weeks ago. The mother developed a thick rubbery scar on her abdomen after a cesarean delivery 12 years ago. His temperature is 37°C (98.6°F). Physical examination shows a nontender, flesh-colored swelling of the right earlobe. The skin is intact over the swelling, and it is soft and nontender. There is no cervical lymphadenopathy. Which of the following is the most likely cause of the swelling in this patient?
>
> (A) Bacterial infection
> (B) Contact dermatitis
> (C) Foreign body
> (D) Keloid
> (E) Lipoma" [42]

(Used with permission from the National Board of Medical Examiners)

The answer is "D". Despite keloid formation being more common in the Chinese population and with contributions from various genetic factors along with triggering environmental factors increasing susceptibility [55], the inclusion of "African American" reinforces the belief that only persons with darker skin tones are prone to this form of scarring. This association serves as an indicator of "D" being the correct answer.

The following question was published in the *USMLE Step 1 Pathology PreTest Self-Assessment and Review, 12th Ed. (Brown EJ, 12th Ed, 2010, Copyright McGraw-Hill, used with permission):*

> "An 8-year-old African girl develops a rapidly enlarging mass that involves a large portion of the right side of her maxilla. A smear made from an incisional biopsy of this mass reveals malignant cells with cytoplasmic vacuoles that stain positively with oil red O. Histologic sections from this biopsy reveal a diffuse, monotonous proliferation of small, noncleaved lymphocytes. In the background are numerous tingible-body macrophages that impart a "starry-sky" appearance to the slide. Which of the following viruses is most closely associated with this malignancy?
>
> a. Cytomegalovirus (CMV)
> b. Epstein-Barr virus (EBV)
> c. Herpes simplex virus (HSV)
> d. Human immunodeficiency virus (HIV)
> e. Human papillomavirus (HPV)

The answer is b. The African type of Burkitt's lymphoma is the endemic form and typically involves the maxilla or mandible, while the American type is nonendemic and commonly involves the abdomen, such as bowel, ovaries, or retroperitoneum. The African type is associated with Epstein-Barr virus (EBV) and a characteristic t(8;14) translocation [51]."

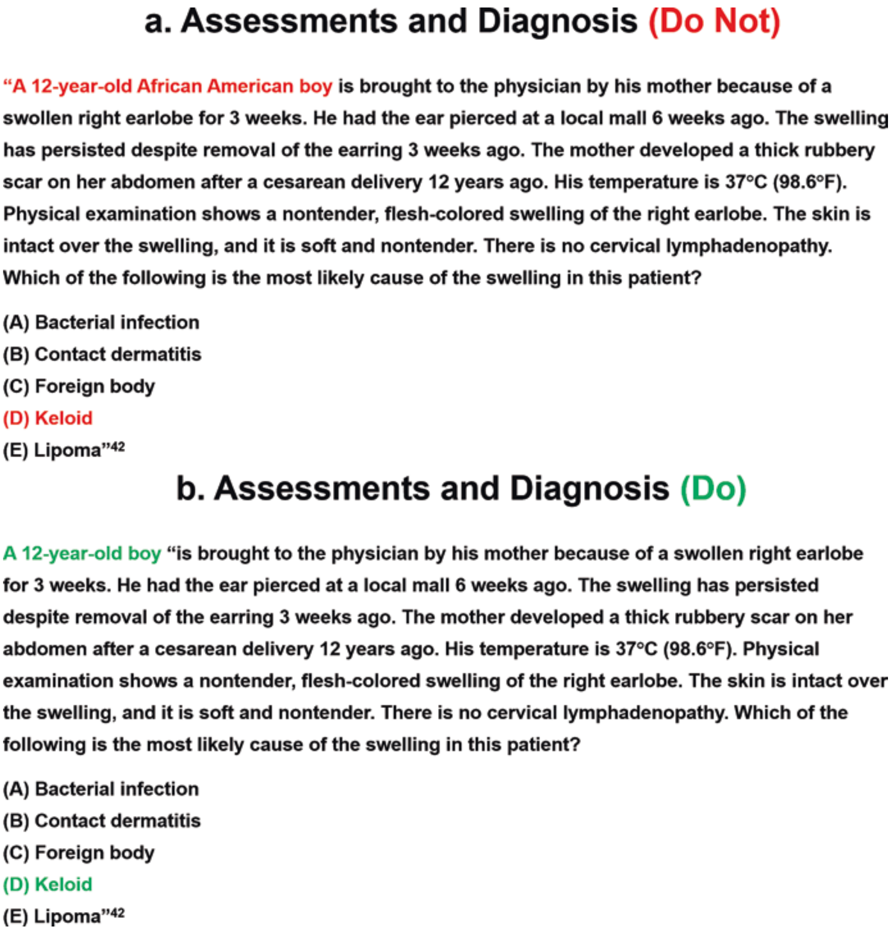
In all examples mentioned above, the inclusion of "Africa," "African," "African American," and/or, "Afro-Caribbean" in the stem provides an associative clue to the underlying conditions, all of which most often considers being of African descent a risk factor. Doing so instills a belief of innate racial predisposition and prompts students to regard race as a diagnostic shortcut to an underlying biological cause of disease (Fig. 5.6a). Ripp and Braun [10] suggest that race and ethnicity only be used when referencing environmental or social experiences relevant to the patient's health, not as a proxy for biogenetics, culture, or social class [10, 56]. However, being that the length of multiple-choice question stem vignettes is generally short and limits the ability to provide adequate social context, do ensure that the addition of race and/or ethnicity in an assessment question is significantly relevant and/or required for analysis of the question [10].

Encouraging medical students and practitioners to disproportionately associate the Black population with genetic diseases and use race as a diagnostic shortcut on assessments is dangerous, irresponsible, and not inconsequential as it undermines the obligation to eliminate racial inequity in healthcare [10, 57]. This training practice contributes to physician bias, encourages the use of racial assumptions in clinical practice, impacts policy decisions and reinforces race as a risk factor to disease which could result in delayed diagnosis or improper or lesser treatment recommendations therefore exacerbating detrimental health outcomes and disparities [5].

However, a common argument for the inaccurate use of race in the medical curriculum is that medical licensing organizations embed race-based guidelines and racial diagnostic cues within their assessments and students are therefore tested on and expected to make those racial assumptions [3, 5, 10]. Considering that medical curricula are heavily focused on preparing students for taking these licensing examinations, the use of inappropriate race-based guidelines and diagnostic methods on similarly styled medical school assessments would also be expected. Since the learning process is often guided by assessments, examinations involving race-based medicine should be reformed [3, 58]. As such, it is incumbent upon medical educators to review their own clinical assessments/examination questions and rewrite or replace those that reinforce the false concept of race-based medicine [3, 5] (Fig. 5.6b). It is also imperative that both educators and students request medical licensing examination organizations to not only reexamine how race is used in their assessments, but to either revise or remove examination questions that encourage the use of racial and ethnic associations with disease burden as diagnostic cues and highlight race-based clinical guidelines and diagnostic algorithms [3, 5, 58]. However, while this process ensues, educators must ensure that the medical knowledge conveyed in their instructional materials is race-conscious. If educators comprehensively and accurately discuss the underlying causes of disease while also providing social and structural context to disease burden, students will be able to strategically identify race-based patterns embedded in examinations and understand them to not be absolute or a result of genetic differences [3].

Recommendations: [3, 5, 58]

Do not	Do
Include race and/or ethnicity in the vignette stem to serve as an associative clue to the underlying condition (Fig. 5.6a) Train students to use racial assumptions as a diagnostic shortcut in order to choose the best answer (Fig. 5.6a) Reward students for being able to determine the correct answer by recognizing racial or ethnic associations with disease (Fig. 5.6a)	Ensure that race and ethnicity are only used when referencing environmental or social experiences that are relevant to the patient's health (Fig. 5.6b) Consider adding race and/or ethnicity in an assessment question only if doing so is significantly relevant and/or required for analysis of the question Acknowledge and address the erroneous use of racial cues in examination questions by board review and test preparatory materials Address the dangerous ramifications of using race and/or ethnicity as testing cues/shortcuts in promoting physician bias, delayed or improper clinical care, and continued racial inequity in healthcare Rewrite or replace clinical vignettes and assessment questions that use racial and ethnic associations with disease burden as diagnostic cues and/or shortcuts to the correct answer (Fig. 5.6b) Request that national medical licensing examination organizations reassess, revise, or remove examination questions that encourage the use of racial diagnostic methods and highlight the use of race-based clinical guidelines and/or diagnostic algorithms.



a. Assessments and Diagnosis (Do Not)

“A 12-year-old African American boy is brought to the physician by his mother because of a swollen right earlobe for 3 weeks. He had the ear pierced at a local mall 6 weeks ago. The swelling has persisted despite removal of the earring 3 weeks ago. The mother developed a thick rubbery scar on her abdomen after a cesarean delivery 12 years ago. His temperature is 37°C (98.6°F). Physical examination shows a nontender, flesh-colored swelling of the right earlobe. The skin is intact over the swelling, and it is soft and nontender. There is no cervical lymphadenopathy. Which of the following is the most likely cause of the swelling in this patient?

(A) Bacterial infection
(B) Contact dermatitis
(C) Foreign body
(D) Keloid
(E) Lipoma”[42]

b. Assessments and Diagnosis (Do)

A 12-year-old boy “is brought to the physician by his mother because of a swollen right earlobe for 3 weeks. He had the ear pierced at a local mall 6 weeks ago. The swelling has persisted despite removal of the earring 3 weeks ago. The mother developed a thick rubbery scar on her abdomen after a cesarean delivery 12 years ago. His temperature is 37°C (98.6°F). Physical examination shows a nontender, flesh-colored swelling of the right earlobe. The skin is intact over the swelling, and it is soft and nontender. There is no cervical lymphadenopathy. Which of the following is the most likely cause of the swelling in this patient?

(A) Bacterial infection
(B) Contact dermatitis
(C) Foreign body
(D) Keloid
(E) Lipoma”[42]

Fig. 5.6 Assessments and diagnosis. (**a**) Incorrectly including race and ethnicity in the vignette stem to serve as an associative clue to an underlying condition; inappropriately training students to use racial assumptions as a diagnostic shortcut in order to choose the best answer. (**b**) Appropriately adding race or ethnicity in an assessment question only if doing so is significantly relevant and/or required for analysis of the question

5.4.4 Do Acknowledge the Flaws in Race-Based Clinical Guidelines and Diagnostic Algorithms

“Research conducted with a flawed understanding of race informs flawed guidelines, and such guidelines endorse the use of racial categories in the diagnosis and treatment of common conditions.” [3] These clinical guidelines further reinforce the notion that REHD are caused by racial and ethnic differences, when in reality, REHD are the consequential effects of multi-level racism [4]. One detrimental way that racism is embedded into medical education and practice is by the use of clinical guidelines and diagnostic algorithms that “correct” for their results depending on the patient’s race or ethnicity [6]. Typically, these race-adjusted algorithms are used to personalize risk assessment and inform clinical decisions, so as to allot more medical attention and resources to White patients than to individuals of marginalized racial and ethnic populations [6]. For instance, in the area of obstetrics, the Maternal-Fetal Medicine Unit (MFMU) developed a prediction tool, the Vaginal Birth After Cesarean (VBAC) calculator, to estimate the probability of a woman having a successful vaginal birth after a previous cesarean delivery [6, 59]. In creating this algorithm, the MFMU found that a combination of six variables, including race and ethnicity, ‘accurately’ predicted the likelihood of a successful VBAC. Both higher body mass index (BMI) and older age decreased the probability of VBAC success, whereas previous vaginal delivery and self-identification as being White increased the likelihood of VBAC success [6, 59]. Specifically, women who identified as Black/African American or Hispanic were shown to have a lower probability of success and therefore half as likely to have a VBAC as compared to White women [6, 59].

The higher rates of cesarean sections maintained among Black/African American and Hispanic women in the United States continues to illustrate racial disparities in obstetric care. Originating during the slave-era, the study of obstetrics and gynecology (OBGYN) played a crucial role in establishing medical racism by standardizing racial differences and making them fundamental to the practice of OBGYN [59]. With the VBAC calculator considering race and ethnicity as indicators of a biological health difference between human populations, this further supported the erroneous application of race as a risk factor in obstetric outcomes. However, it is racism not race, that is the principal cause of the REHD underlying the VBAC risk factor [59]. Two variables used in the VBAC calculator, BMI and treated chronic hypertension, are influenced by systemic and interpersonal racism (i.e., increased police brutality in Black and Brown communities elevates the risk of high blood pressure and obesity in women) [59]. Additionally, structural inequalities that affect income and resources, such as insurance coverage, and unequal treatment in healthcare (i.e., undermining patient autonomy, disregarding patient’s care preference and/or informed consent) can influence VBAC preference [6, 59]. However, despite lower predicted VBAC success, more Black women (75%) and Hispanic women (54%) express preference for VBAC as compared to 43% of White women [59]. These data indicate that racism is the driving cause of Black/African American and Hispanic women maintaining higher rates of cesarean sections than White American women [6, 59]. In response to the demands to eliminate race-based medicine and further remove the racial component from clinical algorithms, the MFMU recently developed a new VBAC calculator that excludes race and ethnicity [59]. However, despite this action, the myriad ways in which racism continues to affect obstetrics and the VBAC issue remain unaddressed. In order to eradicate racial inequities in obstetric outcomes, attention must be given to the ways in which implicit and explicit racism structures the probability of VBAC success and the proclivity of health care providers to respect their patient’s care preferences [59].

Up until recently, the upward adjustment in estimating the glomerular filtration rate (GFR) increased the threshold of concern only for persons who identified as Black or African American [3]. As such, Black patients would have to progress to higher stages of kidney disease before receiving medical intervention resulting in poorer health outcomes [4]. The foundation of the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) and Modification of Diet in Renal Disease (MDRD) GFR calculations relied on theoretical beliefs and biases dating as far back as slavery that muscle mass varied by race, with Black people having greater muscle mass than White persons [4, 5]. Not only was this race-based system of determining GFR scientifically flawed, but it had severe negative clinical implications including missed or delayed diagnosis of kidney disease and nonreceipt of medical care. For example, Black patients were less likely to receive timely referrals to a nephrologist, be prescribed dialysis sessions, or be identified as viable kidney transplant candidates [4, 6]. In 2020, Ahmed et al. found that if the race multiplier was excluded as a factor in the CKD-EPI equation, 33.4% of Black patients would have been diagnosed with a more severe stage of chronic kidney disease [60].

Finally, after several years in medical curricula and practice, the validity of the race-based CKD-EPI and MDRD GFR calculations were called into question. As of September 2021, the National Kidney Foundation (NKF) and the American Society of Nephrology (ASN) announced that "effective immediately in the U.S., estimated glomerular filtration rate should be calculated with an updated equation that does not include a race modifier for Black patients [61]."

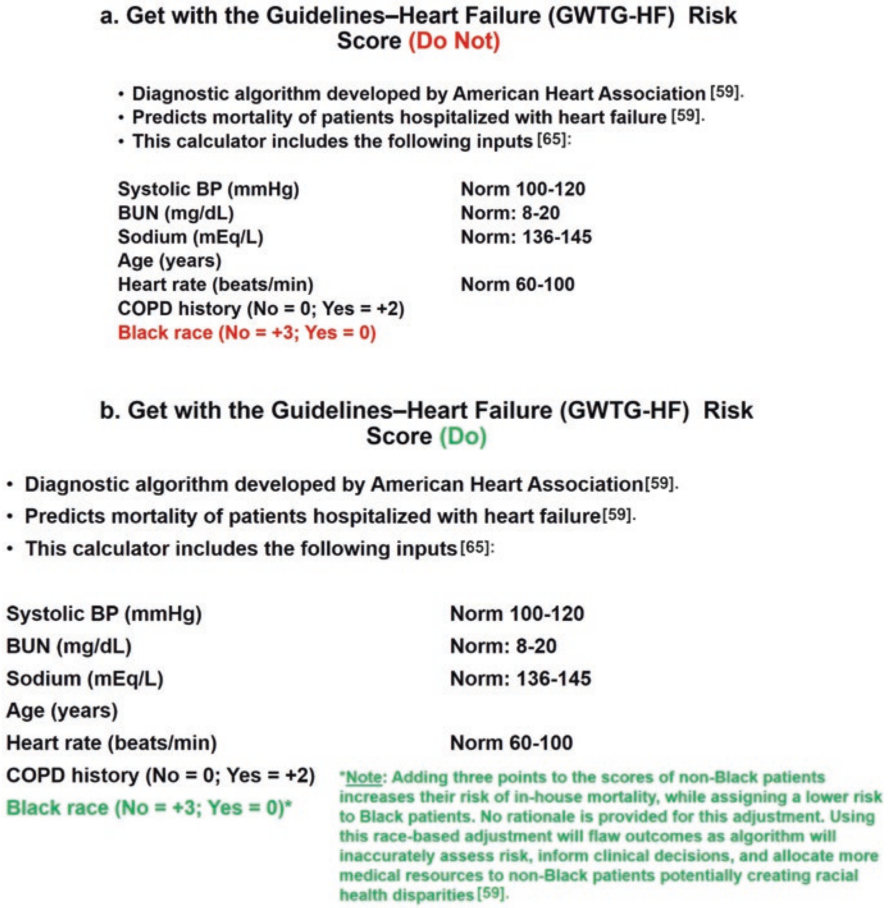
The STONE algorithm, which assesses the probability of kidney stones in patients presenting with severe flank pain, incorporates the "origin/race" factor which adds three points to the scores of non-Black patients [6]. By assigning Black patients a lower score, the STONE algorithm potentially precludes physicians from evaluating for and diagnosing Black patients with kidney stones [6]. Additional studies provided no rationale as to why non-Black patients would be more likely to develop kidney stones nor determined the "origin/race" factor to actually predict the risk of developing kidney stones [6]. Similarly, The American Heart Association Get with the Guidelines–Heart Failure Risk Score, which predicts the risk of death in hospitalized patients with heart failure, also adds three points to the scores of non-Black patients, thereby assigning a lower risk to Black patients [6] (Fig. 5.7a). Again, no rationale is provided for this adjustment [6]. In a parallel manner, urinary tract infection (UTI) testing guidelines for children, including those released by the American Academy of Pediatrics in 2011, categorize "fully Black" or "partially Black" children as lower risk [6].

Despite the elimination of racial adjustment factors in assessing GFR and kidney function, race-adjusted spirometry algorithms, based on misperceptions of racial and ethnic differences in lung capacity, continue to be used to determine lung function and diagnose lung disease [4]. Test values indicating normal function for Black people would be considered pathological for White people. Similar to the negative clinical implications outlined above for GFR calculation, this discrepancy results in delayed diagnoses and medical intervention with poorer health outcomes for Black patients as compared to White patients [4].

With Black people considered to be "low-renin responders" and therefore less likely to respond to ACE inhibitors [62]; with persons of Asian-descent purported to be twice as likely than White people to experience severe muscle damage when taking a cholesterol-lowering drug [63]; with the combination pill, BiDil, becoming the first drug to be approved by the US Food and Drug Administration to treat one particular racial group, more specifically heart failure exclusively in Black patients, despite the drug having also been found to be effective in non-Black patients [4, 63, 64]; these race-based clinical guidelines illustrate how cultural prejudice is being assigned a biological reality [63]. Fundamentally rooted in a history of racism, these race-based clinical guidelines and diagnostic algorithms are generally taught to medical students and physicians without an explanation as to the origins of the existing REHD [6] (Fig. 5.7a). Oftentimes, no information regarding their derivation or evidentiary basis is provided, or if rationales are offered, they are supported by outdated or biased data [6] (Fig. 5.7a). Consequently, these flawed guidelines adversely inform clinical practice [3]. Prior to interpreting test results and offering subsequent treatment recommendations, it is imperative that clinicians consider the racial biases and cultural stereotypes that may underpin clinical guidelines, and which may consequently influence their teachings and adversely impact patient interactions and outcomes (Fig. 5.7b). While the medical field's understanding of race and racism may have advanced over the past two decades, the diagnostic guidelines and algorithms used to inform clinical practice do not adequately reflect these new insights [6]. Reconsidering race adjustments and encouraging the implementation of equal diagnostic and treatment guideline standards for all patients regardless of race or ethnicity would ensure more equitable health outcomes [6].

Recommendations: [3–6].

Do not	Do
Use race as a predictor of disease (Fig. 5.7a) Endorse the use of guidelines that emphasize race in the diagnosis and treatment of diseases (Fig. 5.7a) Assume that all patient populations have equal access to accurate healthcare recommendations	Address the improper use of race as a biological determinant in establishing clinical guidelines (Fig. 5.7b) Acknowledge and address the pervasive use of race-adjusted clinical guidelines and algorithms, race-based diagnostic bias, and treatment plans (Fig. 5.7b) Discuss the racial biases and cultural stereotypes that underpin race-based guidelines Discuss the impact of systemic racism on racial and ethnic health disparities (Fig. 5.7b) Encourage the implementation of equal diagnostic and treatment guideline standards for all patients regardless of race or ethnicity



a. Get with the Guidelines–Heart Failure (GWTG-HF) Risk Score (Do Not)

- Diagnostic algorithm developed by American Heart Association [59].
- Predicts mortality of patients hospitalized with heart failure [59].
- This calculator includes the following inputs [65]:

Systolic BP (mmHg)	Norm 100-120
BUN (mg/dL)	Norm: 8-20
Sodium (mEq/L)	Norm: 136-145
Age (years)	
Heart rate (beats/min)	Norm 60-100
COPD history (No = 0; Yes = +2)	
Black race (No = +3; Yes = 0)	

b. Get with the Guidelines–Heart Failure (GWTG-HF) Risk Score (Do)

- Diagnostic algorithm developed by American Heart Association[59].
- Predicts mortality of patients hospitalized with heart failure[59].
- This calculator includes the following inputs [65]:

Systolic BP (mmHg)	Norm 100-120
BUN (mg/dL)	Norm: 8-20
Sodium (mEq/L)	Norm: 136-145
Age (years)	
Heart rate (beats/min)	Norm 60-100
COPD history (No = 0; Yes = +2)	
Black race (No = +3; Yes = 0)*	

*Note: Adding three points to the scores of non-Black patients increases their risk of in-house mortality, while assigning a lower risk to Black patients. No rationale is provided for this adjustment. Using this race-based adjustment will flaw outcomes as algorithm will inaccurately assess risk, inform clinical decisions, and allocate more medical resources to non-Black patients potentially creating racial health disparities [59].

Fig. 5.7 Race-based clinical guidelines and diagnostic algorithms. (**a**) Inaccurately using race as a predictor of disease and endorsing the use of guidelines that emphasize race in the diagnosis and treatment of diseases. (**b**) Appropriately discussing the biological use of race, racial biases, racism, and cultural stereotypes in establishing clinical guidelines; accurately addressing the pervasive use of race-adjusted clinical guidelines and algorithms, race-based diagnostic bias, and treatment plans

5.4.5 Do Address Examples of Race-Based Clinical Guidelines and Diagnostic Algorithms in the Classroom

To illustrate the extent to which race-based clinical guidelines adversely shape students' understanding of race, and, subsequently, the health outcomes of patients, some examples of common race-based clinical guidelines are provided. These hypothetical examples were inspired by discussions had with medical students from Rocky Vista University who described their didactic experiences in which race-based clinical guidelines were mentioned with or without providing context or acknowledging the impact of SDOH (Fig. 5.8a). This section intends to serve as a foundation for discussions on how medical educators can better teach about REHD and provide context regarding the flawed understanding of race applied by these guidelines [3] (Fig. 5.8b). After each example is presented, some historical context regarding these guidelines will then be provided followed by the same example being reiterated using some of the best practices for teaching REHD as outlined in this manual. Although the following examples are hypothetical, they will illustrate the recommendations provided thus far from Sect. 5.3: "Race is Not an Epidemiological Determinant for Disease Risk, Diagnosis, and/or Treatment."

Example 1a Hypertension (HTN) Treatment (Do Not) A pharmacology professor is delivering a lecture on HTN medications which reviews mechanisms of action, adverse effects, and clinical relevance. When discussing angiotensin-converting enzyme (ACE) inhibitors (ACE-I), the professor mentions that these medications are first-line treatment for HTN. Later, when discussing calcium channel blockers (CCB) and thiazides, however, the professor states that CCB and thiazides are preferred over ACE-Is in Black patients without any further context.

This example is problematic. The professor does not adequately discuss the context for such differences in clinical management leaving room for assumptions. This lack of context has the potential to instill or implicitly reinforce student bias as students may think that the differences in treatment are due to biological factors and associate race as an independent risk factor for HTN [66].

British and American organizations such as the British Hypertension Society, the National Institute for Health and Clinical Excellence, and the Joint Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC) have based their current recommendations on two main studies, both of which provide supporting evidence for the race-based recommendation against ACE-I use in Black patients with uncomplicated hypertension (no comorbid diabetes or chronic kidney disease) [67–69].

Published in 2002, The Anti-HTN and Lipid-Lowering Treatment to Prevent Heart Attack Trail (ALLHAT) was conducted in patients with HTN and at least one other coronary heart disease (CHD) risk factor. The trial had 33,357 participants of which 35% identified as Black [69, 70]. The primary objective of the trial was to compare anti-HTN medications, such as ACE-I (lisinopril), CCB (amlodipine), and thiazide diuretics (chlorthalidone) by measuring the incidence of CHD events [69, 70]. The trial showed that the incidences of CHD events across all three groups were not significantly different. However, with further analysis, the data showed a 40% higher incidence of stroke in participants randomly assigned to the ACE-I group versus those in the diuretics group. As the incident stroke rates for non-Black participants were nearly identical in both the ACE-I and diuretic groups, the authors concluded that the 40% difference in incident stroke rates between both groups was due to an increased event rate in the Black participants randomly assigned to the ACE-I group [69].

As the trial study continued, a majority of participants required more than the first-line anti-HTN medication to keep their blood pressure at the target goal [69]. While current clinical guidelines recommend the combined use of either thiazide diuretics or CCBs added to ACE-Is for management of hypertension, the ALLHAT algorithm study design prohibited this combination. Instead, participants in all three groups of this trial were given a beta-blocker (atenolol) as a second-line anti-HTN medication to keep blood pressure controlled [69, 71]. The use of this particular treatment strategy is not consistent with current guidelines for hypertension management as use of beta-blockers is typically reserved for patients who either have a comorbid indication for beta-blocker use (e.g., ischemic heart disease) or who cannot take ACE-Is, CCBs, or diuretics due to intolerance or contraindication [69, 71].

The second study, the African American Study of Kidney Disease and Hypertension (AASK), looked at 1094 self-identified Black participants with HTN and chronic kidney disease (CKD) who were randomly assigned to an ACE-I or CCB medication group [72]. The study showed that CCBs were more effective than ACE-I in lowering blood pressure, with ACE-I being more effective in reducing the risk of exacerbating CKD, especially when proteinuria was present [72]. Overall, this trial showed that although ACE-I is less effective in lowering blood pressure, it continues to have an essential role in the management of HTN, especially in patients with an increased risk of CKD [69].

As of 2022, the current recommendation by the JNC8 is that ACE-I are indicated for Black patients only when HTN is accompanied by diabetes or CKD, but not for uncomplicated HTN [73]. As mentioned in Sect. 5.4.4, the flawed understanding of race as an underlying biological cause of disease continues to inform these clinical guidelines that inherently treat Black patients differently than other races. Using or restricting antihypertensive agents merely based on race can reinforce REHD [69, 73]. For instance, in a study with 21,664 adults, stage I and stage II HTN prevalence remained higher in Black and Asian adults than White adults, regardless of sex [74]. Black patients may be less likely to attain HTN control and might require multiple antihypertensive medications because of race-based clinical guidelines [73]. Black patients might benefit from these medications at an earlier stage of the disease process, especially when there is an increased risk of developing CKD due to uncontrolled HTN [73, 75]. Some societies, such as the American Diabetes Association do not include race-based medicine in their HTN management algorithms [76]. Medical educators must move away from race-based medicine (Example 1a above) and must provide context to current guidelines in order to move towards race-conscious medicine (Example 1b).

Example 1b Hypertension (HTN) Treatment (Do) A pharmacology professor is delivering a lecture on HTN medications which reviews mechanisms of action, adverse effects, and clinical relevance. When discussing ACE-Is, the professor mentions that these medications are first-line treatment for HTN. Later, when discussing CCB and thiazides the professor states that CCB and thiazides are the preferred monotherapy over ACE-Is in Black patients according to several organizational guidelines. However, the professor provides a concise explanation of the main two studies that guided these race-based recommendations and encourages students to create dialogue around this issue, emphasizing that race is a social construct and highlighting the role of race-based guidelines in perpetuation of health inequalities. The professor then invites students to ask follow-up questions during office hours for more discussions on this topic.

Example 2a Atherosclerotic Cardiovascular Disease (ASCVD) Risk Estimation (Do Not) During a cardiovascular lecture on atherosclerotic cardiovascular disease, a professor mentions the American College of Cardiology (ACC) and the American Heart Association (AHA)‘s atherosclerotic cardiovascular disease risk assessment guideline also known as “ASCVD risk estimator.” Its goal is to assess the 10-year risk of cardiovascular events such as myocardial infarction, heart failure, stroke, and/or peripheral artery disease [77]. While sharing this guideline with students, one student asks why race is part of the scoring estimator, to which the professor replies: “Great question! The ACC and AHA showed in their 2019 guidelines that Black patients are more likely to develop ASCVD events than patients of other races with an otherwise equivalent risk burden [77].” The professor then continues on with their lecture.

Even though the professor welcomed that question and answered it using their most up-to-date knowledge on the ACC and AHA guidelines [78], the professor failed to provide context by acknowledging the complex root causes for this health disparity occurring in the United States. By not including the role of systemic racism, implicit bias, and SDOH in his response, the professor subconsciously reinforces the idea that race-based medicine accurately guides clinical decisions [3].

A more race-conscious approach (Example 2b) would be to base the ASCVD risk score on clinical metrics and comorbidities, which acknowledge the various determinants of health that increase cardiovascular risk among Black patients [73, 78]. Medical educators must encourage health professional students to care for the whole patient, not just a disease; as such, calculators, such as the ASCVD risk score, must be used appropriately in clinical decision-making. Race-conscious medicine, discussed in Chap. 3, utilizes a holistic lens as well – how does my patient’s race, geography, and socioeconomic background interact with their health? Example 2b addresses these points.

Example 2b Atherosclerotic Cardiovascular Disease (ASCVD) Risk Estimation (Do) During a cardiovascular lecture on atherosclerotic cardiovascular disease, a professor mentions the ACC/AHA atherosclerotic cardiovascular disease risk assessment guideline also known as “ASCVD risk estimator.” Its goal is to assess the 10-year risk of cardiovascular events such as myocardial infarction, heart failure, stroke, and/or peripheral artery disease [77]. While sharing this guideline with students, one student asks why race is part of the scoring estimator, to which the professor replies: “Great question! The ACC and AHA showed in their 2019 guidelines that Black patients are more likely to develop ASCVD events than patients of other races with an otherwise equivalent risk burden [77].” The professor then adds that this phenomenon is multifactorial, as it includes systemic racism and various SDOH. The professor reminds students to use these risk scores and estimators as a small piece of the patient’s bigger picture and to do their best in accounting for all aspects of patient health.

Example 3a Prostate Cancer Screening Guidelines (Do Not) A professor is teaching about prostate cancer screening. Following the American Cancer Society (ACS) guidelines, the professor states that screening should be performed after reviewing risks and benefits of the procedure with each patient. The professor then states that the starting age for such discussion is 50 years old for men at average risk and 45 years old for men at moderate risk, such as Black men and men with first-degree family relatives diagnosed with prostate cancer before 65 years old [79]. Following the professor’s statements, a student asks what places Black patients at higher risk for prostate cancer. The professor admits to not having an adequate answer to the question and moves on with the lecture (Figure 5.8a).

In 2010, the ACS prostate screening guidelines based their current recommendation of classifying Black men as a high-risk group for prostate cancer on evidence provided by two small-sample studies [80, 81]. In comparison to studies with predominantly White participants, these studies found that prostate-specific antigen (PSA) test positivity, prostate cancer detection rates, and positive predictive value (PPV) were reportedly higher among older African American and Afro-Caribbean men [80]. For instance, up to 54% of African American men ages 70 to 79 surpassed the 4-ng/ml PSA cutoff for positivity as compared to 28% positivity in predominantly White participants age 70 and older [80]. Due to this evidence and the lack of new data to modify this guideline, the ACS continues to recommend that African American men begin screening for prostate cancer at age 45 [80]. Despite the previous evidence and well-intentioned guideline to screen Black men earlier, harm from race-based clinical guidelines may still occur. As depicted by Vince et al. (2021), the disparity of incidence and mortality due to prostate cancer has increased for Black men from 1975 to 2015 [81]. The data gathered by Vince et al. (2021) suggests that while cancer treatments have improved, these advancements may have not reached everyone equitably due to structural racism [81]. Additionally, stating that Black men are at a greater risk for prostate cancer as compared to White men implies biological rather than social causes for the increasing incidence and mortality of prostate cancer in Black men [79]. On the basis of increased incidence and mortality in Black men due to prostate cancer, the lack of evidence suggesting a genetic link, and evidence suggesting that the increased risk is likely due to inequity in access to healthcare, insurance, and lack of screening, medical educators must mention the context for a given race-based guideline [79]. Lastly, the subtle, yet pervasive use of the word "average risk" when excluding other racial and ethnic groups is conducive to bias and pathologizing race in medicine [73]. This notion, implies that Whiteness represents the baseline in which medical guidelines are created, and any deviation from this "norm" is considered as an increased risk of disease burden.

In Example 3a, the professor did well in admitting that they did not have an answer to the student's questions. Acknowledging one's limitations is part of the cultural humility model [82] as outlined in Chap. 4. Using the same model, the professor should invite students to learn with them about this topic or commit to coming back with an answer for the next lecture as illustrated in Example 3b.

Example 3b Prostate Cancer Screening Guidelines (Do) A professor is teaching about prostate cancer screening. Following the ACS guidelines, the professor states that screening should be performed after reviewing risks and benefits of the procedure with each patient. The professor then states that the starting age for such discussion is 50 years old for men at average risk and 45 years old for men at moderate risk, such as Black men and men with first-degree family relatives diagnosed with prostate cancer before 65 years old [79]. Following the professor's statements, a student asks what places Black patients at higher risk for prostate cancer. The professor admits to not having an adequate answer but commits to doing some research and providing any new information he finds in their next class. The next day, the professor presents a new lecture slide that explains the rationale behind the clinical guideline, as well as outlines studies that show the role that health inequity plays in the increased incidence and mortality in Black men due to prostate cancer. Lastly, the professor emphasizes that although these guidelines include race, race is a social construct and there is no evidence suggesting a genetic link to the increased risk of prostate cancer in Black men [79] (Figure 5.8b). The professor then invites the students to attend office hours for further discussions as to why Black patients are at a higher risk of developing prostate cancer.

Example 4a eGFR (Do Not) During a nephrology lecture, a professor discusses the importance of measuring renal function using the glomerular filtration rate (GFR). While describing GFR, how it is measured, and the reason for using GFR as an index of kidney function, the professor mentions that the recommended method for estimating GFR is based on serum levels of the waste product, creatinine. They state that the two most commonly used equations are the Modification of Diet in Renal Disease (MDRD) equation and the Cockcroft-Gault equation. Both use several variables such as age, sex, weight, and race to estimate GFR. A student asks why race is included as a variable for calculating eGFR, and the professor explains that these equations relied on flawed studies, which showed African Americans to have increased muscle mass and creatinine generation [83]. However, the professor adds that, according to the National Kidney Foundation (NKF) and the American Society of Nephrology (ASN) Task Force, the use of race as a variable is outdated and is no longer accepted as an eGFR modifier [61]. The professor states that this guideline change occurred after the public health and medical communities strongly advocated to move away from race-based medicine to ensure that racial bias does not influence diagnosis and treatment of kidney disease. The professor then asks if students have any follow-up questions, and then continues on with the lecture.

As of 2021, the NKF and ASN Task Force have published new guidelines including the use of race-free eGFR and adding cystatin C, in addition to serum creatinine, as a confirmatory assessment of GFR [61]. This change has been driven by hundreds of medical educators, public health scholars, students, and clinicians committed to eliminating the existing health disparities exacerbated by race-based medicine [61]. The flawed understanding of race in relation to kidney function is analyzed in Sect. 5.3. However, the process that led to the race-free eGFR is important to note. The NFK and ASN Task Force developed three phases for this year-long project: (1) gathering evidence, (2) evaluating five eGFR approaches, and (3) disseminating a unified recommendation to address the problem [84, 85]. As detailed in Chap. 6, a similar systematic approach is undertaken to develop curricula that effectively address REHD. Medical educators should work closely with curriculum managers to design content that is race conscious.

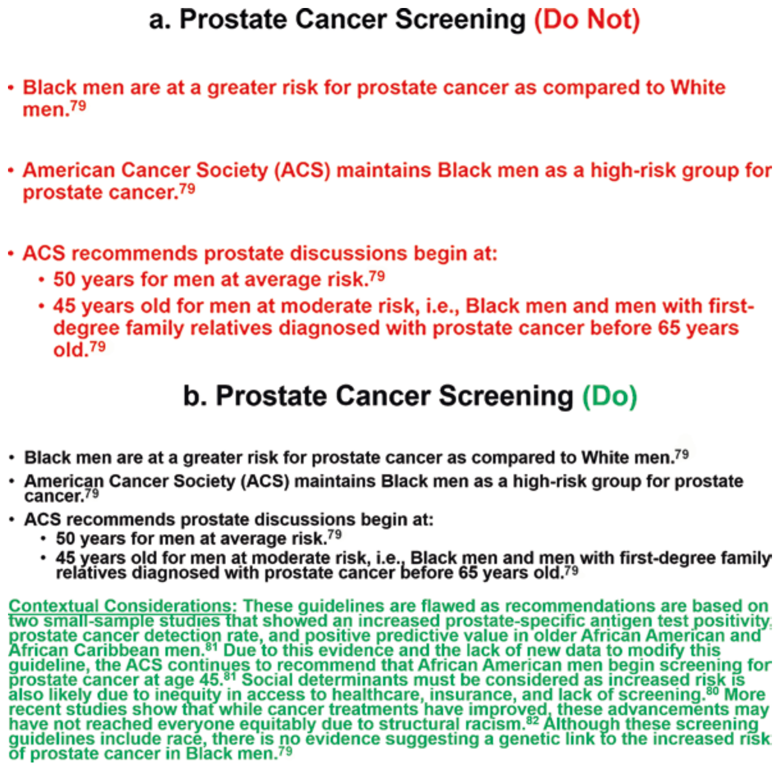
In Example 4a, the professor successfully uses evidence-based medicine to answer the students' questions and challenges the use of race in the eGFR equation by acknowledging its foundation in racial bias. However, this REHD would be more completely acknowledged and addressed if the professor included published data illustrating how this race-based guideline resulted in worse health outcomes for Black patients compared to non-Black patients. Ideally, the professor would also explicitly state this as an example of a REHD before encouraging students to continue studying the topic using a cultural humility lens. Based on the content from Chap. 4 of this manual, being open and inviting students to follow-up with more questions after class, through email, or during office hours are adequate ways to maintain open communication and allow for two-way learning.

Example 4b: eGFR (Do) During a nephrology lecture, a professor discusses the importance of measuring renal function using the GFR. While describing GFR, how it is measured, and the reason for using GFR as an index of kidney function, the professor mentions that the recommended method for estimating GFR is based on serum levels of the waste product, creatinine. They state that the two most commonly used equations are the MDRD equation and the Cockcroft-Gault equation, that both use several variables such as age, sex, weight, and race to estimate GFR. A student asks why race is included as a variable for calculating eGFR, and the professor explains that these equations relied on flawed studies showing African Americans to have increased muscle mass and creatinine generation [83]. However, the professor adds that, according to the NKF and the ASN Task Force, the use of race as a variable is outdated and is no longer accepted as an eGFR modifier [61].The professor states that this guideline change occurred after the public health and medical communities strongly advocated to move away from race-based medicine and ensure that racial bias does not influence diagnosis and treatment of kidney disease. The professor then provides an example showing the old eGFR measure disproportionately affecting the care of Black patients, including preventing Black patients from receiving timely nephrology consults and delaying dialysis or kidney transplants. The professor concludes the discussion by expressly acknowledging the outdated race-based eGFR calculation and the resulting disparate patient outcomes as a REHD rooted in racism. Finally, the professor asks if students have any questions, reassures the students that they can ask follow-up questions at any time, or during office hours, and the professor moves on with the lecture.

These examples, though hypothetical, represent realistic student experiences. Medical educators should be aware of the adverse effects of race-based clinical guidelines included in their instructional materials. As previously discussed in Chap. 4, a cultural humility approach, which embodies openness, self-awareness, egoless, supportive interaction, and self-reflection, should guide discussions about risk factors and race-based clinical guidelines and algorithms (Fig. 5.8b).

Recommendations: [69, 73, 82]

Do not	Do
Mention race-based clinical guidelines, risk factors, and algorithms without acknowledging the impact of SDOH (Fig. 5.8a) Be complacent on race-based clinical guidelines See risk estimators as the sole component of clinical decision-making (Fig. 5.8a)	Reach out to curriculum managers for feedback Welcome interactions with students using a 'cultural humility' approach (Fig. 5.8b) Investigate and communicate the reasoning behind the use of race for guidelines, risk factors, and algorithms (Fig. 5.8b)



a. Prostate Cancer Screening (Do Not)

- Black men are at a greater risk for prostate cancer as compared to White men.[79]
- American Cancer Society (ACS) maintains Black men as a high-risk group for prostate cancer.[79]
- ACS recommends prostate discussions begin at:
  - 50 years for men at average risk.[79]
  - 45 years old for men at moderate risk, i.e., Black men and men with first-degree family relatives diagnosed with prostate cancer before 65 years old.[79]

b. Prostate Cancer Screening (Do)

- Black men are at a greater risk for prostate cancer as compared to White men.[79]
- American Cancer Society (ACS) maintains Black men as a high-risk group for prostate cancer.[79]
- ACS recommends prostate discussions begin at:
  - 50 years for men at average risk.[79]
  - 45 years old for men at moderate risk, i.e., Black men and men with first-degree family relatives diagnosed with prostate cancer before 65 years old.[79]

Contextual Considerations: These guidelines are flawed as recommendations are based on two small-sample studies that showed an increased prostate-specific antigen test positivity, prostate cancer detection rate, and positive predictive value in older African American and African Caribbean men.[81] Due to this evidence and the lack of new data to modify this guideline, the ACS continues to recommend that African American men begin screening for prostate cancer at age 45.[81] Social determinants must be considered as increased risk is also likely due to inequity in access to healthcare, insurance, and lack of screening.[80] More recent studies show that while cancer treatments have improved, these advancements may have not reached everyone equitably due to structural racism.[82] Although these screening guidelines include race, there is no evidence suggesting a genetic link to the increased risk of prostate cancer in Black men.[79]

Fig. 5.8 Race-based clinical guidelines and diagnostic algorithms in the classroom. (**a**) Inaccurately mentioning race-based clinical guidelines, risk factors, and algorithms without acknowledging the impact of SDOH and using them as the sole component of clinical decision-making. (**b**) Accurately presenting reasoning behind the use of race for guidelines, risk factors, and algorithms and welcoming interactions with students using a 'cultural humility' approach

5.5 Do Include a Wide Range of Representative Examples

With systemic racism permeating medical education, there is a noticeable lack or lesser representation of individuals from marginalized racial and ethnic populations [5]. When these populations are discussed or referenced, the context is often stereotypical and stigmatizing. For example, Latina women are often associated with undocumented or illegal immigration and/or an increased risk for particular diseases, such as systemic lupus erythematosus [5]. Discussions regarding Native American health often involve nutrition-related chronic diseases, such as diabetes mellitus, heart disease, and alcohol/substance abuse [5, 21–23, 35, 36]. Aside from perpetuating the associations of specific disease burdens with specific races and ethnicities, equal, accurate, and counter stereotypical representation of all racial and ethnic groups remain largely absent from medical content [5].

5.5.1 Do Ensure that Descriptive Findings and Language are Inclusive to Marginalized Populations

Once more, in the course evaluation for our Rocky Vista University Hematologic/Lymphatic II course, the students noticed the lack of diverse representation in their lecture content and requested that non-White case presentations and clinical specimen photos illustrating a variety of ethnicities be presented. For example, “Consider using other images of disorders in individuals of different skin tones. Example-another picture demonstrating palor [sic] in a hand of an individual with darker skin tone.” Additional student comments proposed several questions to be addressed, “Only mention of racial/ethnic diversity was in stats or as just statements without any…photos of certain skin conditions or patient presentations. The single “diverse” photo throughout the entire course was of a black baby with osteomyelitis secondary to sickle cell. Little to no diversity in any of our patient case scenarios so I’m pretty sure everyone is being trained to still rely on the default of envisioning a White patient in their head when we are taught to think about our differentials, labs and tests to order, and treatment plans. What does a jaundiced person who is ethnically Asian look like? What do iron deficient palmar creases look like in black and Persian patients?” [19].

Throughout medical education and practice, population diversity is often neglected as textbook, journal articles, and online testing resources customarily default to language and descriptors that favor White patients [10, 58, 86]. The study conducted by Ripp and Braun [10] found that when race or ethnicity was mentioned in USMLE practice question banks, 85.8% of questions referenced White patients, framing the White population, their diseases and presenting symptoms as the standard for medical education [10]. Additionally, less than 1% of the practice test questions referenced Hispanic and/or Native American populations and no questions mentioned the Native Hawaiian/Pacific Islander population [10]. This disproportionate representation has been pervasive particularly when depicting dermatological or symptomatic conditions on Black and Brown skin, which have resulted in missed or improper diagnoses in areas such as anemia, physical abuse, melanoma, and COVID-19. For example, Singh et al. (2021) published a systematic review of 116 images depicting the cutaneous manifestations of COVID-19 and found none of the images to include darker skin tones, despite COVID-19 disproportionately affecting communities of color [87]. Additionally, the Centers for Disease Control and Prevention (CDC) had previously listed “bluish lips or face” (cyanosis) as an “emergency warning sign” of severe, potentially life-threatening COVID-19 infection [88]. However, even if critically oxygen-deprived, Black and Brown patients with darker skin tones would be less likely to display blue coloring, but instead exhibit a more gray or white discoloration of the nails, gums, and the area around the eyes [88, 89]. By using White skin tone as the standard, the CDC website reinforced racial bias and disparities in health care, particularly with regard to the COVID-19 pandemic [84]. As of February 7, 2022, the CDC website has been updated to more accurately include “Pale, gray, or blue-colored skin, lips, or nail beds, depending on skin tone [88].”

Prior to this recent recognition by the CDC, UK medical student, Malone Mukwende, recognized the essential need for medical educators to feature images of dermatological findings, such as rashes, bruising, and discolorations, in a range of skin tones. Student Doctor Mukwende co-created *Mind the Gap: A handbook of clinical signs in Black and Brown skin* to help medical educators teach students how to recognize signs and symptoms on darker skin tones in order to prevent delayed or mis-diagnosis, and highlight the need for more inclusive language when using patient descriptors [86, 90]. Since the publishing of *Mind the Gap* in 2020, various websites, including VisualDx, a diagnostic clinical decision support system that was "created to enhance diagnostic accuracy, aid therapeutic decisions, and improve patient safety," have also updated their software to include dermatology images for "All Skin Types" and for "Skin of Color [91]."

While these demonstrations of inclusivity should be commended and publicized, the need to include diverse representation in visual images is not solely specific to the field of dermatology nor is it limited to inclusive depictions of skin tone. When considering the addition of visual images to any type of educational materials, it is important to ensure that the graphics do not perpetuate cultural stereotypes, bias, stigma or shame [17], but promote content that illustrates racial and ethnic equity in healthcare.

When creating clinical cases or vignettes for assessment questions, medical educators should ensure that the content promotes diversity, equity, and inclusion (DEI) [17]. For example, create clinical scenarios that challenge bias and stereotypes by including racially or ethnically marginalized patients who are highly educated, gainfully employed, upper middle class, are not obese, not incarcerated, and not battling substance abuse, with representation of White patients who may face those issues [17]. Additionally, include less common presentations such as a White-identified patient with SCD or a Black patient with cystic fibrosis to help reduce bias in clinical reasoning and decision making by dissociating specific racial and ethnic groups with a specific disease risk [17]. Medical educators should also allow for the clinical scenarios to integrate discussions of systemic racism and its impact as a risk factor on health inequities while also acknowledging privilege-based healthcare [17]. Oftentimes, clinical cases referenced in textbooks or added to online resource banks may not have initially been closely reviewed for offensive language, stereotypes, and/or biases. As such, medical educators should be willing to discuss and remove racial biases or stereotypes already embedded in the clinical scenario [17]. Chapter 6 of this manual discusses the joint responsibility of medical educators and curriculum managers to identify and replace curricular content of any kind that includes implicit bias, racism, stereotypes, or other forms of discrimination. Checklists provided in a subsequent section of this chapter provide practical guidelines for achieving these objectives. Ensuring the inclusion of population diversity and the equal representation of all races and ethnicities in instructional materials is essential for preparing medical students to accurately and effectively treat diverse patients [17]. These discussions can have a lasting impact on students' perception of disease, conceptions of race, and the provision of excellent quality patient care.

Recommendations: [5, 17 ,89]

Do not	Do
Frame the White population, their diseases, and presenting symptoms as the medical standard (Fig. 5.9a) Feature lecture content that disregards DEI, such as visual images that exclude a diverse range of skin tones (Fig. 5.9a) Perpetuate cultural stereotypes, bias, stigma or shame when showing visual images	Ensure content promotes DEI (Fig. 5.9b) Ensure inclusion of all ancestries, races, and ethnicities in clinical scenarios, test assessments, lecture content, and visual images (Fig. 5.9b) Use descriptors that are inclusive to all races and ethnicities Feature images of dermatological findings, such as rashes, bruising, and discolorations in a range of skin tones Educate students on how to recognize signs and symptoms on darker skin tones to prevent delayed or misdiagnosis Include diverse representation in visual images throughout all lecture/case-based medical content (Fig. 5.9b) Present photo content that illustrates racial and ethnic equity in healthcare (Fig. 5.9b) Create clinical scenarios that challenge bias and stereotypes Include "rare" or less common clinical presentations Enable clinical scenarios to integrate discussions of systemic racism and its impact as a risk factor on health inequities while also acknowledging privilege-based healthcare Ensure clinical scenarios incorporate discussions of structural and SDOH Be willing to discuss and remove racial biases and stereotypes already embedded in the clinical scenario

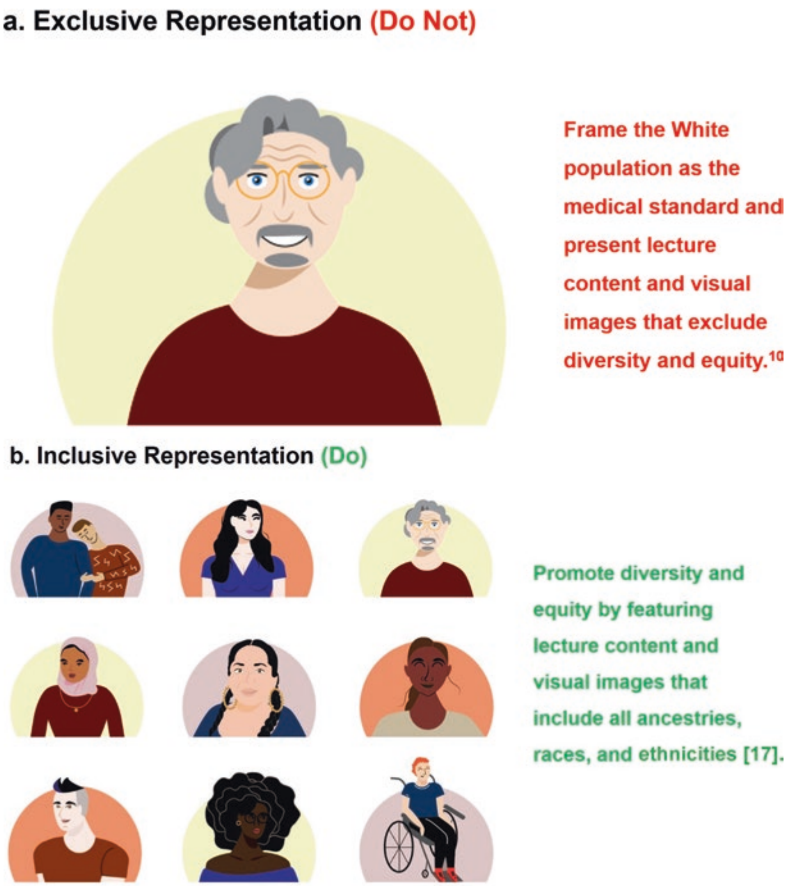


Fig. 5.9 Representative examples. (**a**) Inappropriately disregarding DEI by framing the White population, their diseases, and presenting symptoms as the medical standard. (**b**) Appropriately ensuring content promotes DEI by including all ancestries, races, and ethnicities in clinical scenarios, test assessments, lecture content, and visual images

5.5.2 Do Not Introduce Race or Ethnicity in the First Sentence of a Clinical Vignette

Traditionally in the United States medical system, the three-pronged "age-race-gender" description, such as "*A 48-year-old Black woman* presents with intermittent chest pain" or, "*A 5-year-old White boy* presents with stomach cramps," is often the first detail mentioned when presenting a patient's chart or creating a clinical case scenario. However, it has aptly been asked by physician Dr. Damon Tweedy, "Why does it matter so much whether the patient is white, black, or something else? Does this way of presenting cases assume that race should automatically color the way a doctor approaches a patient's chest pain or achy stomach? [92]" A survey conducted by Nawaz and Brett showed that the preferences on referencing race or ethnicity at the beginning of case presentations varied among medical institutions [48, 93]. Overall, 11% of medical schools instructed students to always mention race, 63% instructed selective use, 9% discouraged referencing race, and 18% did not explicitly address the use of race at all. However, when creating medical content, mentioning race and/or ethnicity in the first sentence of case presentations and clinical vignettes remains a common practice [48, 93]. Clinical scenarios are often designed to assess students' ability to gather, analyze, and deduce information for practical application. Thus, including race and/or ethnicity in the opening sentence endorses the assumption that these categories are relevant for diagnosing disease and reinforce the pervasive notion that race and ethnicity are appropriate substitutes for genetic predisposition to disease [3, 48] (Fig. 5.10a). Some medical educators prefer to include race and/or ethnicity at the beginning of case presentations particularly when the category is thought to surely be associated with a specific disease burden and diagnosis [48]. This misguided practice not only perpetuates bias and stereotyping but promotes harmful diagnostic habits that also reinforce race and/or ethnicity as an epidemiological determinant for disease risk, diagnosis and treatment [3–5, 48, 94]. Regardless of whether a correlation between disease prevalence and ancestry exists [12], the clinical vignette template should not in any way be guided by racial or ethnic association with disease burden [48]. Introducing race or ethnicity at the very beginning of a clinical case without having received any additional information such as family history or physical/laboratory findings may result in inaccurate biological inferences and premature diagnostic closure, which may predispose medical students and practitioners to erroneously oversimplify clinical reasoning, mis- or under-diagnose patients and subsequently provide improper treatment recommendations [48]. However, removing racial and ethnic descriptors and adopting a "color blind" approach to clinical reasoning and medical care is neither a suitable resolution, as with race being linked with physical characteristics, it is a discernible feature that is difficult not to notice [17, 48, 94]. By excluding the racial and/or ethnic category, the significance and validity of patients' identity and experiences are denied, and not mentioning race and/or ethnicity in a clinical vignette may lead to assumptions and reinforce existing biases and health inequities [17, 48, 94]. Additionally, excluding racial and/or ethnic references could detrimentally undermine the increasing acknowledgement of racism's impact on disparate health outcomes or minimize the influence of systemic racism on the disproportionate delivery of healthcare [48]. Another consideration is determining if the inclusion of race and/or ethnicity is absolutely required to answer the question. For example:

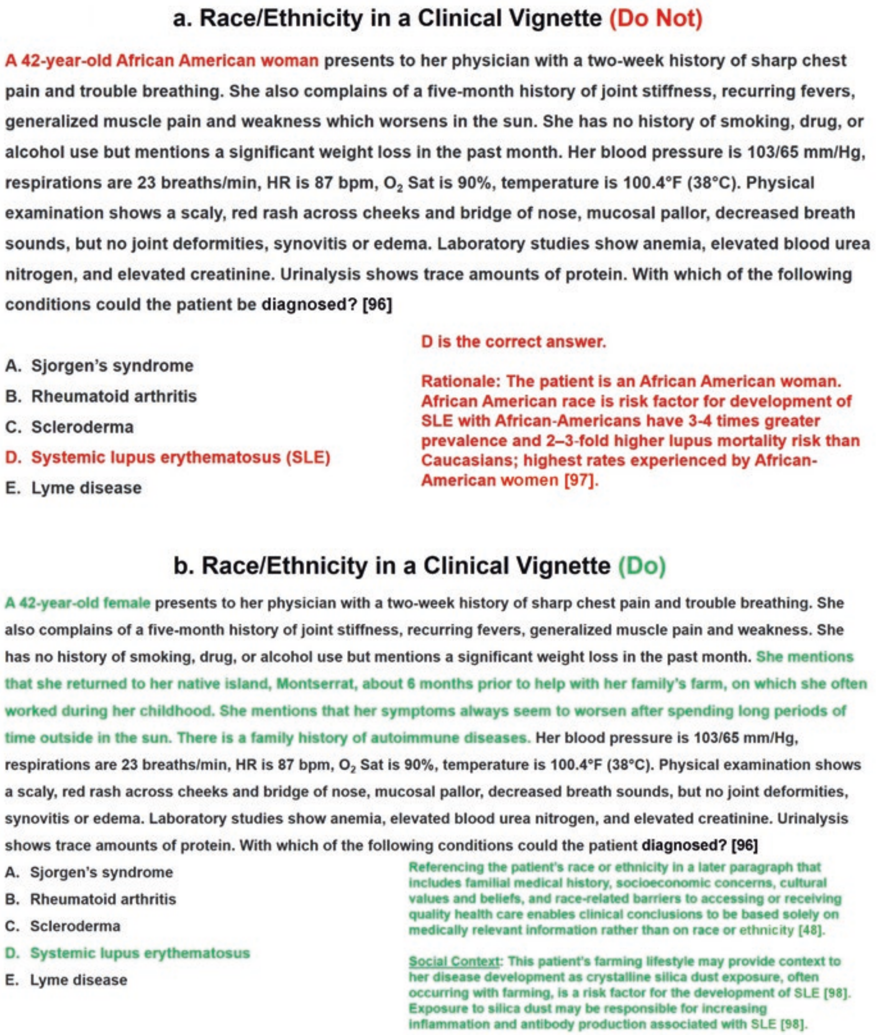
> "A 4-year-old African boy develops a rapidly enlarging mass that involves the right side of his face. Biopsies of this lesion reveal a prominent "starry sky" pattern produced by proliferating small, noncleaved malignant lymphocytes. Based on this microscopic appearance, the diagnosis of Burkitt's lymphoma is made. This neoplasm is associated with chromosomal translocations that involve which one of the following oncogenes?
>
> a. bcl-2
> b. c-abl
> c. c-myc
> d. erb-B
> e. N-myc" [51]

In the above question, located in *USMLE Step 1 Pathology PreTest Self-Assessment and Review, 12th Ed. (Brown EJ, 12th Ed, 2010, Copyright McGraw-Hill, used with permission)*, the diagnosis of Burkitt's lymphoma is incorporated in the stem and the rationale for the correct answer involves knowledge of chromosomal translocations. As such, including the broad term "African," to inappropriately imply Black race while discounting the racial, ethnic, cultural, and regional diversity of all fifty-four countries on the African continent, does not add value to the question other than to provide a diagnostic shortcut and pathologize race.

Given the impact of racism on the SDOH, there have been some arguments towards the immediate mentioning of race or ethnicity irrespective of diagnostic or therapeutic relevance so that a patient's history and physical findings can be assessed from a racial or ethnic perspective [48]. However, a more suitable solution may involve referencing the patient's race or ethnicity in a later paragraph that includes familial medical history, socioeconomic concerns, cultural values and beliefs, and race-related barriers to accessing or receiving quality health care [48]. Employing this practice enables students to formulate accurate and appropriate clinical conclusions without bias, as clinical reasoning and deductions would be based solely on medically relevant information rather than on race or ethnicity [48] (Fig. 5.10b).

Recommendations: [17, 48, 94]

Do not	Do
Introduce race and/or ethnicity in the first sentence of a clinical vignette (Fig. 5.10a) Include race and/or ethnicity at the beginning of case presentations particularly when the category is associated with a specific disease burden and diagnosis (Fig. 5.10a) Remove racial and ethnic descriptors and adopt a "color blind" approach to clinical reasoning and medical care	Include race and/or ethnicity in a later paragraph with additional familial, cultural, and socioeconomic information, if needed (Fig. 5.10b) Mention race and/or ethnicity in a clinical vignette to prevent racial and/or ethnic assumptions which reinforce existing biases and health inequities (Fig. 5.10b) Educate students to formulate accurate and appropriate clinical conclusions without bias (Fig. 5.10b) Base clinical decisions on medically relevant information rather than on race or ethnicity (Fig. 5.10b)



a. Race/Ethnicity in a Clinical Vignette (Do Not)

A 42-year-old African American woman presents to her physician with a two-week history of sharp chest pain and trouble breathing. She also complains of a five-month history of joint stiffness, recurring fevers, generalized muscle pain and weakness which worsens in the sun. She has no history of smoking, drug, or alcohol use but mentions a significant weight loss in the past month. Her blood pressure is 103/65 mm/Hg, respirations are 23 breaths/min, HR is 87 bpm, O_2 Sat is 90%, temperature is 100.4°F (38°C). Physical examination shows a scaly, red rash across cheeks and bridge of nose, mucosal pallor, decreased breath sounds, but no joint deformities, synovitis or edema. Laboratory studies show anemia, elevated blood urea nitrogen, and elevated creatinine. Urinalysis shows trace amounts of protein. With which of the following conditions could the patient be **diagnosed? [96]**

A. Sjorgen's syndrome
B. Rheumatoid arthritis
C. Scleroderma
D. Systemic lupus erythematosus (SLE)
E. Lyme disease

D is the correct answer.

Rationale: The patient is an African American woman. African American race is risk factor for development of SLE with African-Americans have 3-4 times greater prevalence and 2–3-fold higher lupus mortality risk than Caucasians; highest rates experienced by African-American women [97].

b. Race/Ethnicity in a Clinical Vignette (Do)

A 42-year-old female presents to her physician with a two-week history of sharp chest pain and trouble breathing. She also complains of a five-month history of joint stiffness, recurring fevers, generalized muscle pain and weakness. She has no history of smoking, drug, or alcohol use but mentions a significant weight loss in the past month. She mentions that she returned to her native island, Montserrat, about 6 months prior to help with her family's farm, on which she often worked during her childhood. She mentions that her symptoms always seem to worsen after spending long periods of time outside in the sun. There is a family history of autoimmune diseases. Her blood pressure is 103/65 mm/Hg, respirations are 23 breaths/min, HR is 87 bpm, O_2 Sat is 90%, temperature is 100.4°F (38°C). Physical examination shows a scaly, red rash across cheeks and bridge of nose, mucosal pallor, decreased breath sounds, but no joint deformities, synovitis or edema. Laboratory studies show anemia, elevated blood urea nitrogen, and elevated creatinine. Urinalysis shows trace amounts of protein. With which of the following conditions could the patient **diagnosed? [96]**

A. Sjorgen's syndrome
B. Rheumatoid arthritis
C. Scleroderma
D. Systemic lupus erythematosus
E. Lyme disease

Referencing the patient's race or ethnicity in a later paragraph that includes familial medical history, socioeconomic concerns, cultural values and beliefs, and race-related barriers to accessing or receiving quality health care enables clinical conclusions to be based solely on medically relevant information rather than on race or ethnicity [48].

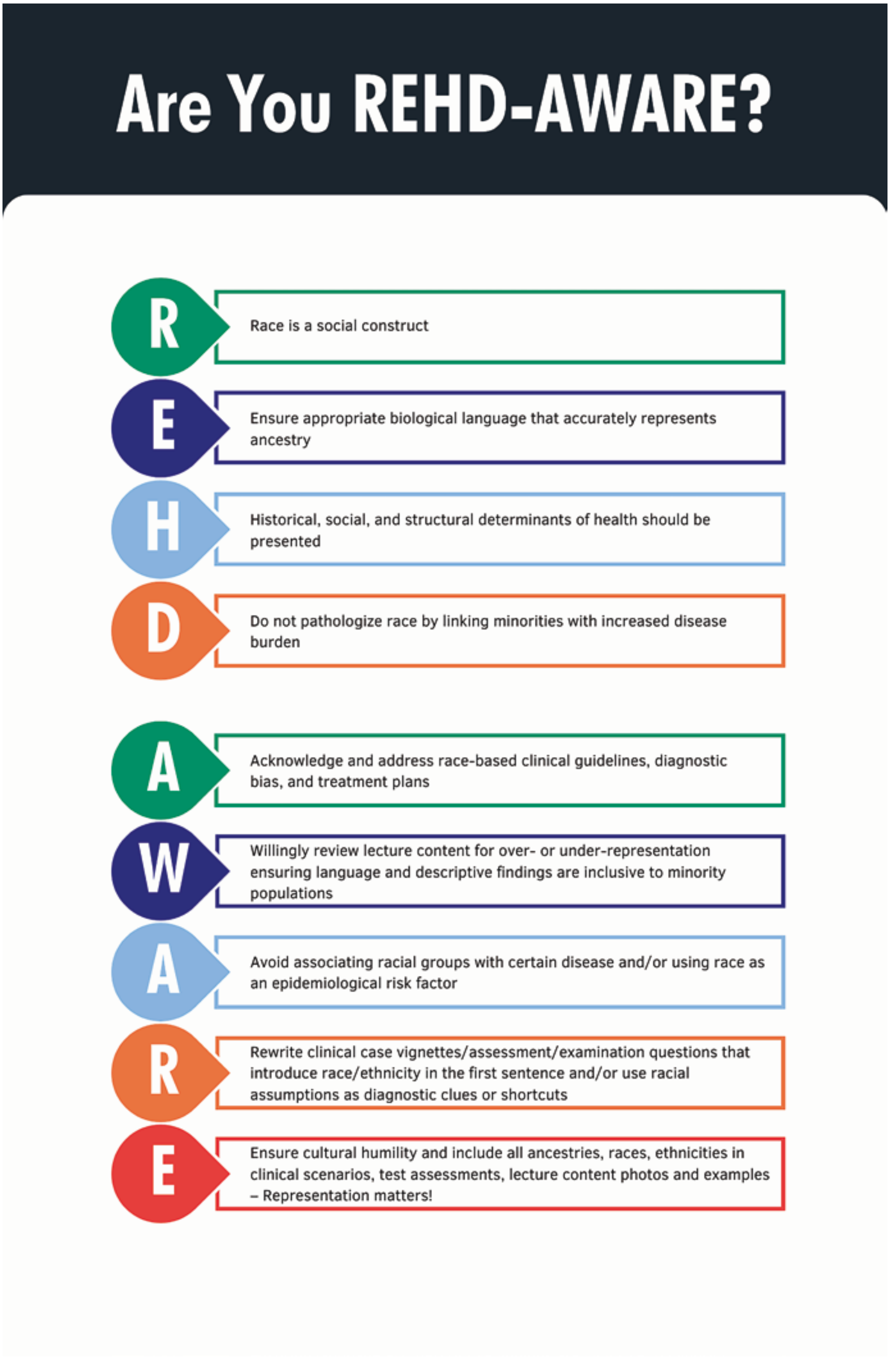
Social Context: This patient's farming lifestyle may provide context to her disease development as crystalline silica dust exposure, often occurring with farming, is a risk factor for the development of SLE [98]. Exposure to silica dust may be responsible for increasing inflammation and antibody production associated with SLE [98].

Fig. 5.10 First sentence of a clinical vignette. (**a**) Inappropriately including race and/or ethnicity at the beginning of case presentations particularly when the category is associated with a specific disease burden and diagnosis. (**b**) Appropriately including race and/or ethnicity in a later paragraph with additional familial, cultural, and socioeconomic information, if needed, to educate students on formulating accurate and appropriate clinical conclusions without bias

5.6 Do Use Checklists to Assist with Addressing and Acknowledging REHD

Two checklists have been created to support medical educators in becoming more proficient in acknowledging and addressing REHD in medical content. Designed as quick-reference guides, these checklists will standardize the process of creating content, ensure all-inclusive elements are incorporated, and address any potentially harmful actions [98]. The ultimate goal of these checklists is to help medical educators revise their instructional materials to ensure accurate portrayals of race in medicine and educate students to implement race-conscious medicine and inclusive medical practices. So, medical educators, before creating new content, please make sure you are REHD – AWARE (Checklist 1). However, if your educational materials have already been created, that is alright, please RACE to improve your existing instructional content (Checklist 2) [17].

Checklist 1:



Are You REHD-AWARE?

R Race is a social construct

E Ensure appropriate biological language that accurately represents ancestry

H Historical, social, and structural determinants of health should be presented

D Do not pathologize race by linking minorities with increased disease burden

A Acknowledge and address race-based clinical guidelines, diagnostic bias, and treatment plans

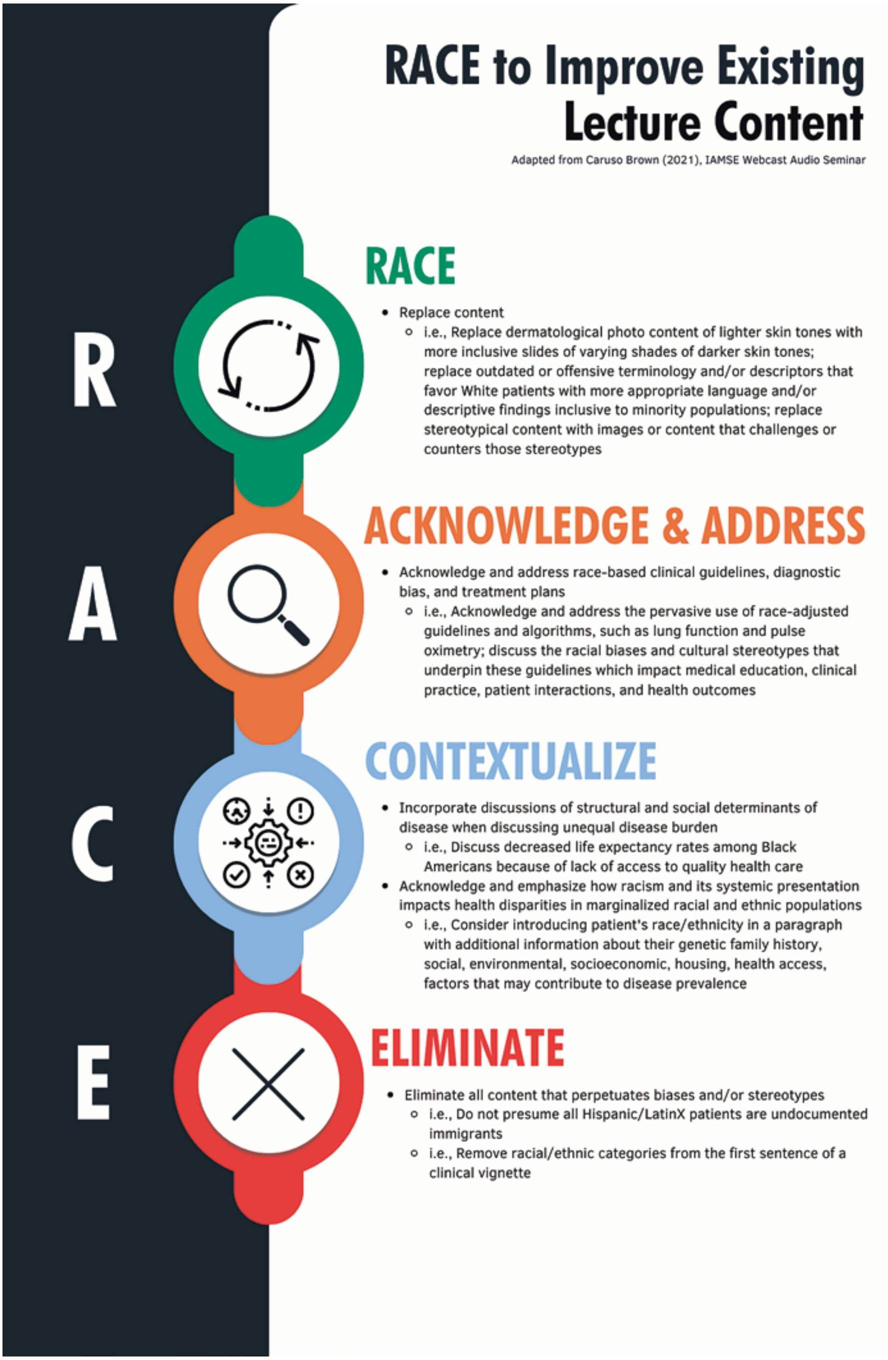
W Willingly review lecture content for over- or under-representation ensuring language and descriptive findings are inclusive to minority populations

A Avoid associating racial groups with certain disease and/or using race as an epidemiological risk factor

R Rewrite clinical case vignettes/assessment/examination questions that introduce race/ethnicity in the first sentence and/or use racial assumptions as diagnostic clues or shortcuts

E Ensure cultural humility and include all ancestries, races, ethnicities in clinical scenarios, test assessments, lecture content photos and examples – Representation matters!

Checklist 2[17]:



RACE to Improve Existing Lecture Content

Adapted from Caruso Brown (2021), IAMSE Webcast Audio Seminar

RACE

- Replace content
  - i.e., Replace dermatological photo content of lighter skin tones with more inclusive slides of varying shades of darker skin tones; replace outdated or offensive terminology and/or descriptors that favor White patients with more appropriate language and/or descriptive findings inclusive to minority populations; replace stereotypical content with images or content that challenges or counters those stereotypes

ACKNOWLEDGE & ADDRESS

- Acknowledge and address race-based clinical guidelines, diagnostic bias, and treatment plans
  - i.e., Acknowledge and address the pervasive use of race-adjusted guidelines and algorithms, such as lung function and pulse oximetry; discuss the racial biases and cultural stereotypes that underpin these guidelines which impact medical education, clinical practice, patient interactions, and health outcomes

CONTEXTUALIZE

- Incorporate discussions of structural and social determinants of disease when discussing unequal disease burden
  - i.e., Discuss decreased life expectancy rates among Black Americans because of lack of access to quality health care
- Acknowledge and emphasize how racism and its systemic presentation impacts health disparities in marginalized racial and ethnic populations
  - i.e., Consider introducing patient's race/ethnicity in a paragraph with additional information about their genetic family history, social, environmental, socioeconomic, housing, health access, factors that may contribute to disease prevalence

ELIMINATE

- Eliminate all content that perpetuates biases and/or stereotypes
  - i.e., Do not presume all Hispanic/LatinX patients are undocumented immigrants
  - i.e., Remove racial/ethnic categories from the first sentence of a clinical vignette

5.7 Conclusions

The role of the medical educator in acknowledging the significant impact of systemic racism on health disparities, inequities, and bias and addressing the misuse of race and ethnicity as a key component of clinical decision-making is crucial for eliminating REHD [1]. Disregarding the misrepresentation of race in medical teachings and practical interactions has the potential to instill or further reinforce harmful racial and ethnic biases and stereotypes that perpetuate disproportionate health outcomes. This chapter provides the medical educator with a series of evidence-based recommendations to develop inclusive educational content and facilitate discussions involving race and ethnicity in medicine. Our recommendations begin with recognizing race as a social construct rather than a biological one. Medical educators and students need to understand that ancestry is responsible for affecting disease prevalence and that racism, not race or ethnicity, is the underlying cause of disproportionate health outcomes [3, 4, 10, 11]. We advise using language that conveys true biological differences and genetic ancestry when discussing predisposition to disease between ethnic groups rather than outdated, non-biologic terms, such as African American, Caucasian, and Asian, which do not account for mixed ancestry and genetic heterogeneity [3]. Although genetic alleles may dictate disease burden and therapeutic effectiveness [11–14], the cause of health disparities in marginalized racial and ethnic populations is not genetically predisposed but contextually multifactorial. As such, it is essential to address the structural, social, economic, political, environmental, and biological factors that contribute to disease burden so as to prevent reinforcing or instilling biased assumptions that could pathologize race and ethnicity and adversely inform clinical care [3, 26]. We encourage medical educators to address the racial biases and cultural stereotypes that underpin race-adjusted clinical guidelines and diagnostic algorithms [4]. Examples of educator-student interactions are provided to show how cultural humility, as previously discussed in Chap. 4, enables the medical educator to better understand the pervasive and harmful role of race in clinical measures of disease burden [81]. We also recommend that educators avoid using race as an epidemiological risk factor for disease and as an associative shortcut for clinical decision-making in case vignette and assessment question stems. We acknowledge that doing so can erroneously reinforce the association of certain populations with certain diseases [3–5], implying genetics to be more important than the impact of social or environmental factors on disease burden in marginalized racial and ethnic groups [10]. We conclude that it is essential for instructional materials to embrace cultural humility and incorporate examples and visual images that ensure descriptive findings and language are inclusive to all racial and ethnic populations and include unbiased, counter stereotypical, diverse representation [17]. We also suggest that race and ethnicity not be introduced in the first sentence of a clinical case scenario but later on in a paragraph that includes additional information pertaining to family history, culture, socioeconomic status, and any social and structural factors contributing to disease; doing so would allow student clinical decision-making to be based solely on medically relevant information rather than on racial and/or ethnic bias [48]. Lastly, we provided medical educators with checklists to assist in creating educational materials that accurately portray race in medicine, ensure inclusive medical practices, and increase proficiency in acknowledging and addressing REHD in medical content [94].

For medical students to wholly comprehend the concept of REHD and their implications, they must be educated to understand the effects of race, racism, and race-based science on disease burden, healthcare compliance and the resulting disproportionate health outcomes in marginalized racial and ethnic populations [3]. As such, we hope the practical recommendations provided in this chapter will prove impactful in assisting educators, in both the didactic classroom and clinical setting, to become more proficient in helping students achieve a more well-defined understanding of race and ethnicity in medicine by acknowledging and addressing REHD in medical education.

Summary of recommendations
5.2 – Understand the impact of race and racism on health outcomes a. Do accurately identify race as a social construct b. Do use the correct biological language
5.3 – Contextualize racial and ethnic differences a. Do provide historical context to disease burden b. Do acknowledge structural and social determinants of disease burden
5.4 – Race is not an epidemiological determinant for disease risk, diagnosis, and/or treatment a. Do not pathologize race b. Do not use race as a risk factor c. Do not use race as a shortcut or "hint" for clinical thinking in assessments and diagnosis d. Do acknowledge the flaws in race-based clinical guidelines and diagnostic algorithms e. Do address examples of race-based clinical guidelines and diagnostic algorithms in the classroom
5.5 – Do include a wide range of representative examples a. Do ensure that descriptive findings and language are inclusive to marginalized populations b. Do not introduce race or ethnicity in the first sentence of a clinical vignette
5.6 – Do use checklists to assist with addressing and acknowledging REHD Checklist 1: REHD – AWARE Checklist 2: RACE

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Chapter 6
Acknowledging and Addressing REHD in Medical Education: Best Practices and Strategies for Curriculum Managers and Institutions

Ellet Stone, Sebastian Ramos, Kristoff Aragon, and Rachel M. A. Linger

6.1 Introduction

Bias in medical knowledge, medical skills, and the learning environment reduces patient care quality [1]. This chapter intends to translate concepts from earlier chapters into concrete, evidence-based techniques for how to best acknowledge and address racial and ethnic health disparities (REHD) at the institutional and program management levels. Instructive procedures and initiatives are organized into checklists and tables to guide administrators and curriculum managers in creating medical education communities and curricula that produce culturally and socially conscious physicians.

> *"The world is a dangerous place to live, not because of the people who are evil, but because of the people who don't do anything about it."* – Albert Einstein

6.2 Practices and Strategies for Curriculum Managers

Curriculum managers oversee the design, implementation, and continuous quality improvement (CQI) of curricular programs. The job titles associated with these responsibilities vary widely across institutions but often include assistant or associate deans, curriculum designers, program directors and/or coordinators, clerkship directors, and course directors. The administrative roles of these individuals present

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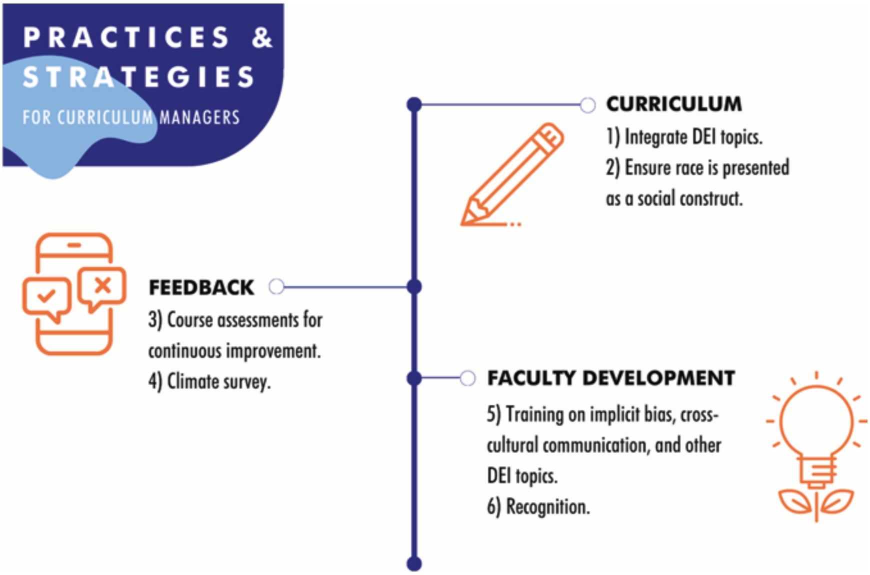


Fig. 6.1 Three key areas within curriculum management that provide opportunities for acknowledging and addressing REHD

the opportunity to play a significant role in successful mitigation of bias and appropriate presentation of REHD in medical education.

Opportunities for curriculum managers can be broadly categorized into three areas: curriculum design and CQI, feedback gathering, and faculty development (Fig. 6.1). The following sections describe the advantages and disadvantages of each approach, discuss specific goals within each category, include examples of each goal, and provide detailed guidance for implementation. More general implementation strategies include (a) collaboration among curriculum managers to achieve all goals or (b) central oversight of initiatives by a Diversity Officer or Thread Director whose primary duties include strategic planning and implementation of diversity, equity, and inclusivity (DEI) initiatives.

6.3 Curriculum Design and Continuous Quality Improvement

6.3.1 Integrate DEI Topics

Goal Survey the current curriculum and document existing courses that incorporate DEI topics (e.g., health systems science, social determinants of health (SDOH), bias training, and cross-cultural communication).

Medical education curricula should include content that empowers learners to recognize and address REHD in their future practice. These courses and programs are sometimes called social justice or social medicine curricula. A comprehensive survey of the current curriculum is likely to identify opportunities for enrichment as well as collaboration among disciplines for addressing topics related to DEI. This process involves curriculum mapping, which will be described further in the *Feedback* section of this chapter. It is important to include curriculum managers, content creators (e.g., faculty), and learners in the process. The perspective of all stakeholders must be considered, but the "big picture" of the complete curriculum is best coordinated by upper-level curriculum management.

Goal Devise a plan to integrate DEI topics throughout the curriculum.

There are many ways to accomplish this goal, and the various options are not mutually exclusive. Depending on the outcome of the curriculum survey described above, achieving this goal might involve supplementation or reorganization of existing DEI content. The most successful approach likely depends on resources available, the urgency of reform, and myriad other factors unique to each institution. Three potential options include longitudinal, course-specific, or distinct approaches to integrating DEI topics throughout the curriculum (Table 6.1).

Table 6.1 Strategies for integrating DEI topics throughout medical education curricula

Approach	Advantages	Disadvantages	Examples
Longitudinal: Periodically supplement existing courses with DEI topics.	• Focus on integration of a longitudinal thread, not new course creation. • Collaborations between programs may create opportunities for interprofessional education.	• Lack of dedicated focus on DEI topics; material may seem "diluted" if not heavily weighted on assessments. • Potential for misalignment of topic presentations with student readiness.	• Discussions integrating topics from the weeks' foundational sciences curriculum with SDOH [2–5]. • Standardized patient (SP) encounters, small-group role play, or didactic sessions combine DEI topics with clinical science [6, 7].
Course-specific: Overview of DEI topics at the start of selected curricular units.	• Establish a foundational understanding of DEI topics prior to the presentation of medical sciences. • Compensate for variable attention to REHD during individual sessions.	• Potential for inappropriate redundancy if sessions are delivered by individual faculty without coordination by a thread director.	• DEI content embedded in foundational science courses [5].

(continued)

Table 6.1 (continued)

Approach	Advantages	Disadvantages	Examples
Distinct: Stand-alone course that achieves specific DEI goals.	• Ensures dedicated focus on DEI topics. • Opportunity for cultural immersion at international locations.	• The least integrated approach. • May require time away from local campus and curriculum. • Resistance from students.	• Community-based learning [8, 9]. • Weekly small group, case-based discussions in a required, stand-alone semester-long course [5, 10]. • Extracurricular training programs [11]. • Immersive elective courses offered at international locations by external organizations [3].

The longitudinal approach is the most integrated of the three options presented in Table 6.1. Best coordinated by a thread director or a collaborative team focused on DEI curriculum, this strategy entails inserting DEI learning sessions into existing courses. Ideally, the timing and content of these sessions will complement existing course learning outcomes. This approach permits collaboration between programs, which may create opportunities for interprofessional education. Disadvantages of this approach are derived from a lack of dedicated focus on DEI topics. For example, if DEI content is not thoughtfully integrated within the curricular sequence, there is potential for misalignment with student readiness. The method of content delivery and assessment must also be thoughtfully considered. Often, DEI content is not amenable to some assessment methods commonly utilized in medical education curricula (i.e., multiple-choice questions). Assessments that require critical reflection may motivate students to engage more deeply with DEI content [12]. While there are numerous possibilities for how the longitudinal approach may be implemented, small group discussions permit a deep dive into SDOH, can be temporally linked with relevant foundational sciences content, and are amenable to assessment via reflective writing [2]. At the Lebanese American University School of Medicine, discussion of SDOH are integrated with basic and clinical science topics throughout the 4-year curriculum [3]. Other examples focus on exposing learners to the use of a mnemonic tool to facilitate cross-cultural communication during patient-provider interactions [6, 7]. Such devices can be applied in various instructional environments, including standardized patient (SP) encounters or didactic lectures combined with small-group role-play sessions. The basic and clinical science focus can be tailored to match content relevant to the existing course. For example, in a systems-based curriculum, an SP case involving cultural beliefs about hypertension could be included in a renal course to illustrate how cultural beliefs contribute to REHD in hypertension management. This example links to the "Are You REHD-AWARE?" checklist from Chap. 5 by providing faculty the opportunity to present and discuss the historical, social, and structural determinants of health.

In a course-specific approach, a course director, DEI thread director, or guest speaker may provide an overview of REHD relevant to course topics at the beginning of each semester, course, or curricular unit. DEI content can also be delivered at various times throughout basic and clinical science courses [5]. The course-specific strategy allows students and faculty to establish a foundational understanding of race as a social construct before learning about the diagnosis and management of conditions that involve REHD. In courses with multiple teaching faculty, this approach may compensate for variable acknowledgment of REHD during individual sessions. The course-specific DEI sessions should be carefully coordinated across the curriculum in order to avoid the potential pitfall of inappropriate redundancy. In this way, the course-specific approach may seem nearly identical to the longitudinal approach. An important difference is the flexibility and adaptability of the course-specific approach. In other words, a motivated and empowered course director need not wait for a coordinated longitudinal curriculum design before incorporating relevant DEI content into an individual foundational science course. DEI content can be embedded in additional courses in a step-wise fashion. As the number of courses containing DEI content increases, coordination by a thread director or other curriculum manager can facilitate transition from the course-specific approach to a longitudinal approach.

A third option is to create a stand-alone course that focuses solely on specific DEI learning outcomes. While this is the least integrated strategy, it is no less successful. An advantage specific to the distinct course approach is a dedicated focus on social justice competencies and content [10]. These courses may either be required or extracurricular and include non-didactic instructional methods such as community-based participatory research and service learning [8]. Although some extracurricular courses may provide opportunities for cultural immersion across the globe [3], this may also be perceived as a disadvantage if students must take time away from their home campus and curriculum in order to participate in these training opportunities. When social justice content is required as part of the core curriculum, some students may exhibit resistance due to lack of content assessment on licensure exams and a perceived lack of relevance to their future careers. Conversely, student champions of social justice often participate as co-creators of training programs. At Rocky Vista University, students created an annual Summit of Diversity, Equity, Inclusion, and Belonging. The summits, which include a combination of presentations from external guest speakers and panel discussions, are typically delivered in the evening and are well-attended by students and faculty. Students at the Icahn School of Medicine at Mount Sinai developed the Human Rights and Social Justice Scholars Program, which includes didactic sessions, professional development with a faculty mentor, research in social justice, and service projects [11]. Students at Weill Cornell Medical College developed and implemented an elective course called Community Perspectives in Medicine (CPIM) [9]. A primary goal of this course was to increase learner awareness of health disparities and foster cultural humility and competence for mitigating these disparities. To achieve this goal, students participated in small-group discussions with community-based organizations followed by student-only debrief sessions. Resources including modifiable templates for the CPIM course syllabus and facilitator guides are freely available on the publisher's website (https://www.mededportal.org/doi/full/10.15766/mep_2374-8265.10501).

These are just a few possible strategies for integrating DEI topics throughout a medical curriculum. As mentioned previously, these approaches are not mutually exclusive. The University of Vermont Larner College of Medicine (UVM Larner) has implemented a social medicine curriculum that incorporates longitudinal, course-specific, and distinct components [5]. Importantly, there is scant evidence to support the superiority of a specific instructional approach. A mixed-methods study of the UVM Larner curriculum led to a conceptual framework for development of social medicine curricula that incorporates faculty and student perspectives [5]. Others have proposed core competencies of social justice curricula in medical education, identified key content, and discussed appropriate assessments [12]. Future research may differentiate the efficacy of various approaches including evaluation of the long-term impact on physician competencies and patient outcomes.

6.3.2 Ensure Race Is Presented as a Social Construct

The previous section focused on integrating DEI topics into medical education curricula with a focus on preparing learners for a culturally competent future healthcare practice. It is also important to maintain awareness of the broader context of inclusive teaching practices. The importance of presenting race as a social construct was introduced in Chap. 1 of this manual. In order to ensure race is presented as a social construct in medical education curricula, curriculum managers must first understand the ways implicit bias and structural racism appear in learning environments, case studies, assessment items, and other instructional materials. Chapter 5 provided guidance for medical educators on (1) how implicit bias and structural racism present in medical education and (2) various strategies for content analysis and modification that ensure race is presented as a social, not a biological construct. This guidance culminated in the presentation of two checklists: "Are You REHD Aware?" and "R.A.C.E. to Improve Existing Lecture Content." It is essential that curriculum managers both support and participate in these processes. As such, a few guiding principles are briefly revisited here.

Goal Discuss the ways implicit bias and structural racism are presented in medical education.

Despite decades of research concluding that more genetic variation exists within rather than between populations [13–15], medical educators continue to present race as a biological construct. This practice propagates the scientific inaccuracy that race can be used as a proxy for genetic differences. Unequivocally, race is a poor substitute for ancestry or genotype. An illustrative example is provided by two prominent American politicians, Barack Obama and Kamala Harris. While both individuals are Black, they come from very different mixed-race backgrounds. President Obama's mother was a White American woman from Kansas, and his father was a Black man from Kenya. Vice President Harris' mother was East Indian, and her father is Jamaican. Simply describing these two individuals as Black and then drawing medical conclusions based on that categorization ignores the rich genetic diversity inherent in their ancestry. Additional examples of conflating race with ancestry and other misrepresentations of race are explored further in Chap. 5.

Although the target audience for Chap. 5 is medical educators, all persons who work in medical education will benefit from a thorough review of the material.

Bias also shows up in less obvious ways that may be inadvertent or surreptitious. Faculty may overemphasize certain topics and neglect others or disproportionately utilize images of White skin rather than images representing a range of skin tones. Verbal and written language used in instructional materials and assessments may promote bias, discrimination, and stigma towards people belonging to a certain group or with a certain medical condition [1, 16]. Sometimes, these stereotypes are egregious attempts at humor in the classroom that end up being received as microaggressions.

Importantly, the goal is not to omit discussions of race entirely. There are pros and cons of using race as a descriptor in instructional materials, some of which are summarized in Chap. 5. The key is to frame discussions of race and racism in medicine such that social constructs are emphasized and bias is mitigated. Strategies to facilitate achieving this goal are discussed in Chap. 5.

Goal Identify curricular content that includes implicit bias, racism, or stereotypes and implement changes to ensure race is presented as a social construct with acknowledgment of the genetic, socioeconomic, and cultural factors that influence disease.

Curriculum managers serve as an extra checkpoint for the material presented to students. All curricular materials (e.g., textbooks, slide presentations, case studies, exam questions) should be reviewed (in conjunction with faculty) to ensure inclusivity and scientifically accurate representation of race. Curriculum managers should collaborate with course directors and individual faculty to flag slides for review if race is mentioned as a biological construct without social context. When deemed appropriate, students may be included in the process to help broaden perspective, but care should be taken to ensure that students are neither burdened with the responsibility of identifying biased content nor encouraged to police faculty content. The goal is to guarantee existing curriculum accurately presents race and ethnicity, does not reinforce stereotypes, and promotes best practices for specific patient populations. While faculty and other content creators should take primary responsibility for this aim, pattern recognition and monitoring the inclusivity of the entire curriculum must be managed at higher administrative levels.

This process should begin with an objective evaluation of educational resources for race, ethnicity, and culture content. The “Are You REHD-AWARE?” checklist in Chap. 5 summarizes key concepts to consider throughout this process. The following paragraphs review two available tools (Table 6.2) for systematically analyzing curricular content for racism, bias, and stereotypes. Adopting one of these tools and/or creating a new tool specific to the institution’s needs may help curriculum managers standardize the process across the curriculum.

Caruso Brown et al. (2019) [17] created an online, interactive “Bias Checklist (https://redcap.upstate.edu/surveys/?s=KADLRXK8WE)” that can be used to evaluate any educational content for bias, racism, and stereotypes. The tool begins with a link to frequently asked questions, instructions, and a link to a glossary of relevant

Table 6.2 Examples of tools to facilitate analysis of curricular content for implicit bias, race without social context, racism, and stereotypes

Description of tool	Type of content	References
"The Upstate Bias Checklist" • Links to an online glossary of related terms • An interactive, online form that is self-explanatory • User entered data triggers display of sample problematic content and clarifying questions	Universal (e.g., lecture slides, cases, exam questions)	Caruso Brown (2019) [17] and Caruso Brown (2021) [1] See also checklist 2 in Chap. 5.
"Race and culture guide for editors of teaching cases" • Defines key concepts and cites primary literature • Checklist of questions to evaluate teaching cases • Suggested case edits with evidence-based rationales	Virtual patient cases	Krishnan et al. (2019) [18]

terms. These features make the instrument easy to use and self-explanatory. Users answer a series of questions about their content in various domains including race and ethnicity; sex and gender; immigration status, nationality, language, and culture; poverty and socioeconomic status; religion and faith tradition; and more. When the user identifies a domain present in the educational content, with examples of problematic content, a series of clarifying questions appear. Depending on the user responses, suggestions and resources are provided to facilitate mitigation of bias. Typically, users are referred to experts at their institution, the checklist creator (Dr. Amy Caruso Brown), or literature cited on the checklist to determine the best way to revise the educational content. Some general strategies for mitigating bias, racism, and stereotypes in educational content are: (1) remove or replace the content; (2) add context (e.g., discuss the historical and social context for race-based disease association); and (3) apologize for or acknowledge race-based content that is not scientific but persists in medical guidelines and may appear on standardized tests [1]. These strategies are reframed in the "R.A.C.E. To Improve Existing Content" checklist presented in Chap. 5 of this manual. Strengths of Caruso Brown's Bias Checklist include universal applicability to any type of educational content, ease of access, and the interactive format. This tool can even be distributed to guest speakers for self-assessment of their content prior to delivery at your institution. One drawback to this tool is the limited actionable feedback provided regarding how to mitigate the bias. However, consulting experts at your institution is valuable advice that may lead to a fruitful collaboration.

In a pilot study of 63 virtual teaching cases, Krishnan et al. (2019) [18] identified six main categories where common mistakes and pitfalls regarding the presentation of race in patient cases often occurred. Based on their findings, the authors developed a "Race and Culture Guide for Editors of Teaching Cases" available as a Supplemental Digital Appendix on the publisher's website. The guide begins by defining key concepts such as social and structural determinants of health, race, ethnicity, culture, minority identity, and implicit bias, which permits use by evaluators who may not be experts in race, racism, and racial justice. The rest of the guide is divided into sections corresponding to the six main categories of common pitfalls in the presentation of race. Each section includes questions to probe content analysis, suggested edits, and rationales with evidence-based citations from published literature. While the guide was developed to evaluate patient cases, the strategies described could be applied to other types of educational content. The evidence-based suggestions for content revision are a strength of this resource.

6.4 Feedback Gathering

6.4.1 Curriculum Assessment for Continuous Improvement

As mentioned in the Preface of this manual, the process of making medical education and healthcare more equitable and inclusive is continually evolving. The best practices and strategies proposed here will require continuous assessment and evaluation for suitability and validity. Many of the same strategies used for general assessment and evaluation of education can be applied to acknowledging and addressing REHD in medical education curricula. These include curriculum mapping, course evaluations, and other forms of feedback gathering. Importantly, the process does not end with the collection of the data. A key step is to utilize the information gathered to guide data-informed decisions with the goal of continuous quality improvement. As these strategies are foundational to all curriculum design and management, a review of the best practices for feedback gathering is beyond the scope of this manual. The following sections illustrate how these processes can be applied to facilitate acknowledging and addressing REHD in medical education curricula.

One of the goals mentioned above involves surveying the current curriculum and documenting existing courses that incorporate health systems science, SDOH, bias training, and cross-cultural communication. Curriculum mapping is the process of indexing what, when, and by whom the content is taught and assessed in the curriculum [19]. This process documents the evolution of the curriculum and may identify gaps in content coverage as well as excessive redundancies. In medical education curricula, content siloed by discipline may mean that only learners see the entire picture. A detailed curriculum map can reveal the big-picture perspective to curriculum managers, permitting alignment of topics with student readiness. For example, acknowledging the impact of social factors on health disparities is likely to be ineffective if learners and teachers have not previously defined SDOH. An important precedent would be to discuss the structural, social, economic, political, and environmental factors that might contribute to the unequal prevalence of disease in a specific population. Curriculum mapping of these and related DEI topics may facilitate effective and efficient integration of DEI topics throughout medical education curricula.

Course evaluations provide students the opportunity to be heard in a safe, confidential manner. We propose that course evaluations should include questions about the absence or presence of implicit bias, racism, microaggressions, inclusive language, or other expressions of DEI. Some example questions are provided in Table 6.3. It is important that both faculty and students be notified that questions focused on DEI content will appear on course evaluations. If not provided by prior DEI trainings, resources to define terms and concepts relevant to the questions (e.g., implicit bias, inclusive language, and microaggressions) should be distributed with the course evaluations. The intention to help faculty identify successes and blind

Table 6.3 Best practices for assessing DEI topics on course evaluations

DO	DO NOT
Notify students and faculty that questions focused on DEI topics will appear on course evaluations.	Add new evaluation questions without contextualizing the intent.
Provide resources to define terms and concepts relevant to the questions (e.g., implicit bias, inclusive language, and microaggressions).	Assume students and faculty will recognize or understand the terms and concepts addressed by the evaluation questions.
Set the intention of identifying successes and growth opportunities for faculty. Help faculty identify “blind spots.”	Replace a formal, anonymous complaint system managed by Student Affairs, Ombuds Office, or Title IX Coordinator.
Allow students to be heard.	Rely on students to identify all problem areas.
Utilize Likert scale and/or multiple-choice questions to reduce the burden of effort. Example Likert scale questions: This course was presented in an environment, whether in person or virtual, where you felt safe, valued, and included. This faculty member effectively used inclusive language, avoided microaggressions, and mitigated bias in their class sessions.	Phrase questions in a manner that encourages “tattle-tale” feedback.
Include open-ended questions to permit free responses. Example: Please comment on whether or not this course had a positive impact on your educational experience. (Reserve faculty feedback for individual sections.)	Restrict feedback to only Likert scale and multiple-choice questions.
Solicit specific examples of bias, use of language, or presentation of race. Example: Please cite specific examples of the absence or presence of inclusive language, implicit bias, microaggressions, or other expressions of DEI in this faculty member’s sessions.	Limit data generation. Generic feedback is not actionable.
Utilize the data obtained to guide future action.	Collect information without an action plan.

spots in DEI areas should be clearly stated; yet, the burden should not fall solely on students to identify problem areas. Course evaluations should generate growth opportunities for faculty and not lead to punitive action. Table 6.3 summarizes best practices for assessing DEI topics on course evaluations based on our practical experience.

When crafting course evaluation questions to assess DEI topics, utilization of the Likert scale and multiple-choice questions may reduce the burden of effort for students. Pairing these low-effort items with open-ended questions allows students to submit free responses if desired. Responses are most likely to generate actionable feedback if the questions solicit specific examples. It is also useful to teach students that effective feedback is Specific and observable, Timely, Actionable, and Received [20]. The STAR acronym is a useful tool for helping students remember these characteristics of effective feedback.

One potential pitfall to course surveys is related to timing. These evaluations are often administered at the conclusion of a course, which may prevent the timely resolution of issues revealed. For this reason, more frequent, informal modes of feedback gathering may be useful, particularly in longitudinal courses. An alternative method of feedback gathering that may be useful to employ in these scenarios is an anonymous form that is continuously available on the university intranet. A link to the form could be provided in the course syllabus. Submissions should be routed for electronic delivery to the course director, curriculum managers, and/or student curriculum representatives if deemed appropriate.

Another potential pitfall with course evaluations is the temptation to use them as a substitute for a formal, anonymous process for reporting and resolving breaches of professional conduct by students and/or faculty. Institutions of higher education have ethical and legal responsibilities regarding the management of incidents involving harassment and discrimination. Documentation and management of these incidents lies under the purview of an appropriate university office such as the Title IX Coordinator, Ombuds Office, or Student Affairs.

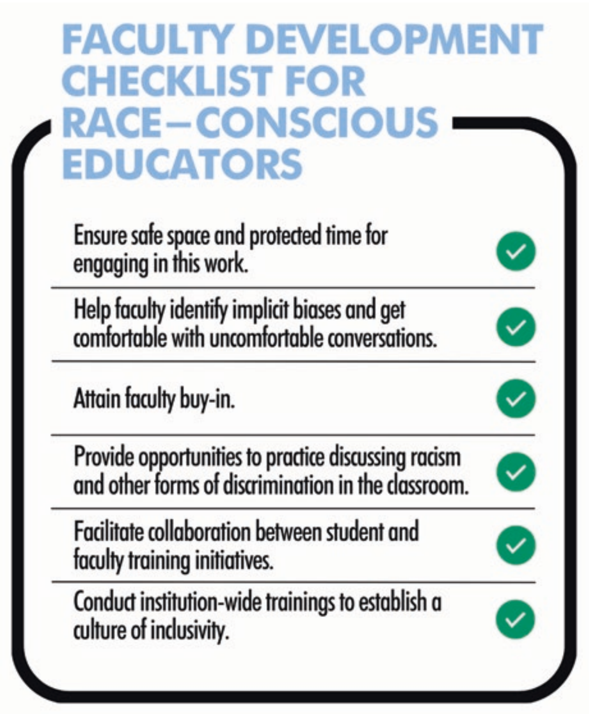
6.4.2 Climate Survey

While course evaluations provide opportunities for students to be heard and may generate growth opportunities for faculty, an institution-wide climate survey can achieve similar goals on a larger scale. Administered annually, a climate survey allows all members of the university community (faculty, staff, students) to share their perspectives regarding various topics, including university culture, DEI, and many others. As mentioned previously, the process does not end with the administration of the survey. To ensure effectiveness and efficiency, the climate survey must be utilized in a timely manner to guide data-informed decisions with the goal of continuous quality improvement. Compiled feedback should be shared transparently with survey respondents. Section 6.11 below expands upon best practices and strategies for this type of institutional feedback gathering.

6.5 Faculty Development

6.5.1 Training

Figure 6.2 summarizes six essential faculty development practices to encourage race-conscious teaching. Faculty development begins with a safe space where faculty can engage, learn, and grow. It is essential to provide time and resources for faculty development about implicit bias, cross-cultural communication, SDOH, and other DEI topics. Mitigating bias is difficult and only occurs after recognition and continual awareness of one's own biases complemented by concern about the effects of that bias. The non-profit organization Project Implicit published an online resource (https://implicit.harvard.edu/implicit/education.html) containing numerous Implicit Association Tests. These anonymous tests allow participants to quickly and privately learn about their own implicit biases. Opportunities for deeper self-paced learning about health equity are available online free of cost. A list of resources curated by the Rocky Mountain Public Health Training Center is available at https://registrations.publichealthpractice.org/Training/Detail/209.



FACULTY DEVELOPMENT CHECKLIST FOR RACE–CONSCIOUS EDUCATORS

- Ensure safe space and protected time for engaging in this work. ✓
- Help faculty identify implicit biases and get comfortable with uncomfortable conversations. ✓
- Attain faculty buy-in. ✓
- Provide opportunities to practice discussing racism and other forms of discrimination in the classroom. ✓
- Facilitate collaboration between student and faculty training initiatives. ✓
- Conduct institution-wide trainings to establish a culture of inclusivity. ✓

Fig. 6.2 Six essential faculty development strategies to encourage race-conscious teaching

To encourage learning and growth, faculty should be provided safe spaces and protected time for open dialogue about DEI topics with fellow colleagues. There are many informal ways to achieve this goal, including formation of small cohorts of faculty who meet regularly to discuss books, films, podcasts, or other media that address DEI topics. Some examples of books, films, and other media that would stimulate conversation are provided in Table 6.4.

Once faculty are familiar with their own biases and the fundamentals of health equity, training should proceed with sessions illustrating how structural racism intersects with specific areas of faculty expertise. The examples of race-based clinical guidelines and diagnostic algorithms presented in Chap. 5 of this manual illustrate that REHD are germane to every medical discipline. Thus, all faculty should be invested in this process. Additional training sessions should allow faculty to practice discussing race, racism, and other forms of discrimination in the classroom. For example, faculty at the University of Wisconsin developed bias literacy and reduction workshops based on Patricia Devine's foundational work investigating prejudice [21, 22].

Table 6.4 Examples of books, films, and other media that prompt reflection on DEI topics

Title	Author(s)/Creator(s)	Type of media
Blindspot: Hidden biases of good people	Mahzarin R. Banaji and Anthony G. Greenwald	Book
American denial	Llewellyn Smith, Christine Herbes-Sommers, and Kelly Thomson	Film
What makes you special?	Mariana Atencio	TEDx talk
Playspent.org	McKinney and Urban Ministries of Durham	Simulator
Lucky boy	Shanthi Sekaran	Book
Just mercy: A story of justice and redemption	Bryan Stevenson	Book
Just mercy	Destin Daniel Cretton, Andrew Lanham, and Bryan Stevenson	Film
How to be an antiracist	Ibram X. Kendi	Book
The color of law: A forgotten history of how our government segregated America	Richard Rothstein	Book
Allegories on race and racism	Camara Jones	TEDx talk
The Spirit catches you and you fall down: A Hmong child, her American doctors, and the collision of two cultures	Anne Fadiman	Book
13th	Ava DuVernay and Spencer Averick	Film
The danger of a single story	Chimamanda Ngozi Adichie	TED talk
Before you call the cops	The Tyler Merritt project and NowThis	Video
White fragility	Robin DiAngelo	Book

In addition to training opportunities focused on the professional growth and development of individual faculty, institution-wide training should occur regularly. Early sessions should focus on learning about structural racism and specific examples of its impact on healthcare [23]. Section 6.9 details specific DEI training programs that the institution can invest in for their faculty. These training courses can be costly; however, they have demonstrated success and are necessary to establish a culture of inclusivity. The training sessions should aim to connect the concepts of DEI with the institution's mission and core values. Including external presenters may help broaden the conversation. Encouraging collaboration between student, faculty, and staff training initiatives may foster a culture of inclusivity.

6.5.2 Recognition

Incentives and recognition are important. If you are reading this manual and are invested in DEI topics, it is easy to assume that you are already motivated to learn about REHD because it will allow you to improve your teaching and/or patient care. However, application of this learning requires significant effort that should be recognized. For example, institutions could acknowledge faculty DEI champions. Annually, students could nominate and elect faculty based on their incorporation of DEI topics in the classroom and how the specific faculty member addresses DEI topics. Another example includes the use of raffles to randomly award participation prizes for faculty development sessions. These are just two easy ways to recognize faculty who invest the time to learn about and incorporate DEI topics into the classroom.

6.6 Practices and Strategies for Institutions

The 2019 standards of the Commission on Osteopathic College Accreditation (COCA) include a non-discriminatory clause that states, "A proposed [college of osteopathic medicine] (COM) must demonstrate non-discrimination in the selection of administrative personnel, faculty and staff, and students based on race, ethnicity, color, sex, sexual orientation, gender, gender identity, national origin, age or disabilities, and religion [24]." The Liaison Committee on Medical Education (LCME) includes a similar anti-discrimination policy in their standards [25]. While these statements are important, they are also vague and lack actionable items for medical institutions to create a diverse workforce that values equity, inclusion, and belonging. Despite the lack of specific guidance in their accreditation standards, the American Association of Colleges of Osteopathic Medicine (AACOM) and the Association of American Medical Colleges (AAMC) have committed to advancing health equity in medical education and the healthcare professions [26, 27]. Notably, COCA approved new accreditation standards in November 2022 that include a multifaceted commitment to advancing health equity. This commitment involves incorporating DEI criteria in numerous institutional elements including program mission, strategic plan, curriculum and assessment, and training for faculty and staff [28]. As of August 1, 2023, these standards will take effect and all COMs with continuing accreditation must comply by July 1, 2024. While we applaude the efforts of COCA and acknowledge that progress has been made, there is still much work to be done in order to achieve the goal of advancing health equity around the world. The remainder of this chapter provides evidence-based strategies for how to best acknowledge and address REHD at the institutional level.

6.7 Building a Cultural of Inclusivity in Medical Education

> *If you build it, they will come* – Field of Dreams (1989)

Building a culture of inclusivity within the healthcare system begins during medical school, when future clinicians are developing their professional identities. Institutions must create processes and relationships that foster a culture of inclusivity in order to train physicians that are aware of implicit biases and able to mitigate their effects. This section will describe a culture of inclusivity at a medical institution and provide a step-by-step guide to drive positive change. While these practices and strategies are geared towards medical education institutions, they may be broadly applicable to institutions of higher education around the globe.

To begin, what is inclusivity? Within our context, **inclusivity** is the practice of providing equal access and opportunities to people who would otherwise be excluded or marginalized. Likewise, we consider a culture of inclusivity as the collective dedication of all stakeholders in an organization to provide equal and equitable access and opportunities to those who would otherwise be marginalized or excluded. Individuals and groups must collaborate to create an environment in which feedback is welcome and immediately addressed to identify gaps, disparities, and biases and ensure continuous culture enhancement. Cultivating a culture of inclusivity within medical institutions has been shown to enhance opportunities and engagement for all [29]. Researchers have observed a direct negative correlation between lack of inclusivity and work performance [29, 30]. Therefore, it is imperative for medical institutions to dedicate time and resources to building an inclusive environment with evidence-based processes that systematically address the key components of leadership, policy, and accountability [29]. Cumulative evidence has identified five integral steps that are centered around the three key components (Fig. 6.3). Each step is crucial to building and maintaining a culture of inclusivity within the medical institution [29–32]. The following section will provide a research-based approach for each step to help ensure proper implementation and aid in establishing and retaining a secure culture of inclusivity within medical institutions.

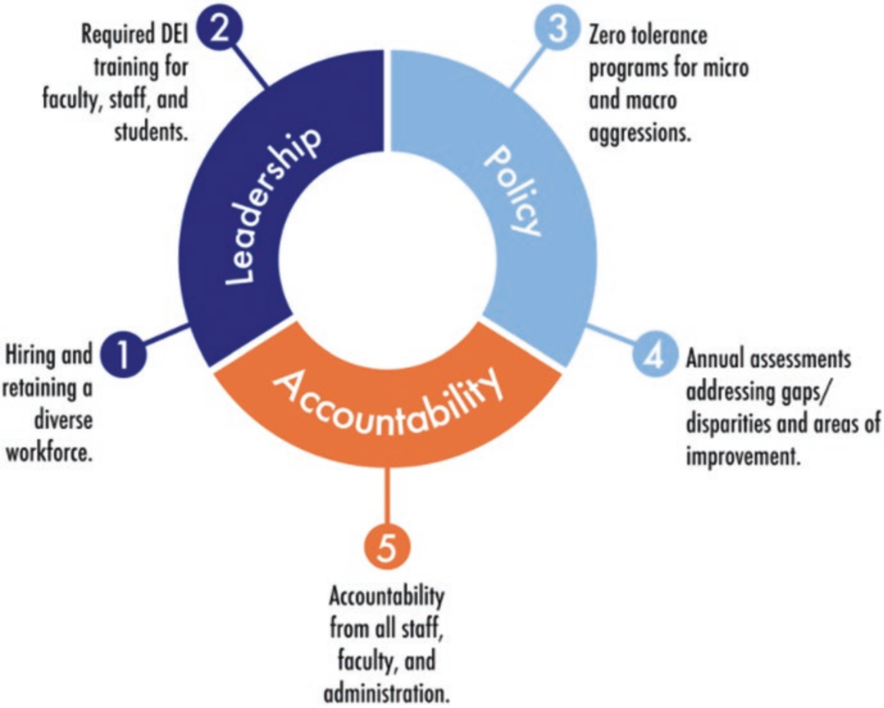


Fig. 6.3 Scheme of three key components and five integral steps necessary to establish and maintain a culture of inclusivity within a medical institution

6.8 Recruiting and Retaining a Diverse Community

Figure 6.4 presents five critical elements for hiring and retaining a diverse community at medical institutions.

Make Diversity a Priority [33, 34]. First, identify the pitfalls within your own institution. There are a variety of ways to address diversity within institutions. In a 2019 webinar, the AAMC provides a model to address diversity within the institution. This model includes four steps that the institution must engage in together: (1) reflective questioning, (2) data collection, (3) synthesis and analysis identifying strengths and opportunities for improvement, and finally (4) displaying findings for the institution to evaluate. Partaking in these steps as an institution helps determine what areas to focus on to improve diversity, e.g., recruitment or retainment [35].

Implement Inclusive Recruitment Strategies [33, 36] Institutions should actively implement recruitment strategies that aim to be open and honest about their institution's climate. They should also be dedicated to expanding student-run organizations that are based on increasing underrepresented minorities (URM) representation

Checklist for Hiring and Retaining a Diverse Community

- Make diversity a priority ✓
- Implement inclusive recruitment ✓
- Invest in success ✓
- Perform regular assessments ✓
- Hold the institution responsible ✓

Fig. 6.4 Five essential strategies for hiring and retaining a diverse community at medical institutions

throughout medicine, such as the Student National Medical Association (SNMA) based in the U.S.; inviting more diverse groups of people to interview; and attending conferences, such as the Annual Biomedical Research Conference for Minoritized Scientists (https://abrcms.org/), and events at historically Black colleges and universities [33].

Invest in Success [34] Investing in the success of an institution's URM faculty, staff, and students requires much more than identifying the issue and stating solutions within written guidelines. Providing concrete commitment to programs such as financial assistance, culturally sensitive health services, and directed mentoring programs will help ensure the institution's pledge to bettering the lives of the URM population at the institution [37]. An example of directed mentoring is the PATHS (Promoting Academic Talent in Health Sciences) program at the University of Pittsburg College of Medicine [34]. The unique aspect of PATHS is the training required for each mentor and mentee. The PATHS program requires all mentors to attend a training workshop that provides a peer resource in which they can connect with other mentors to discuss successes and failures. As for the mentees, they are provided with a one-on-one mentor and must attend group mentoring with 4–6 other students [34]. Mentoring programs provide a sense of community and increase satisfaction among URM faculty, students, and staff by creating an engaging and safe interactive environment. The institution's responsibility is to invest in programs like PATHS, which indicate true investment in their URM population.

Perform Regular Assessments To uphold the institution's statements on creating and maintaining a safe environment in which URM want to learn and work, receiving and addressing constructive feedback is imperative. Conducting a yearly climate survey that investigates matters of DEI achieves this goal. Importantly, a combination of open and closed questions is likely to yield specific and actionable feedback.

Examples of questions that can be asked include: Have you ever felt publicly humiliated at work? Have you experienced macro- or microaggressions at work? Have you ever felt your institution treated you unequally? [37] The concept of an annual climate survey will be revisited in Sect. 6.11 below.

Hold the Institution Responsible The institution's job is to hold itself accountable to maintain a safe and welcoming environment for URM faculty, staff, and students. Accountability is an integral part of Step 1, Hiring and Retaining a Diverse Workforce. These concepts are also broadly applicable to establishing and maintaining a culture of inclusivity within a medical institution. As such, accountability is independently included as Step 5 in Fig. 6.3. One specific example of how to hold each institution responsible is requiring the institution to publish on its website, or in some public manner, the statistics of URM faculty staff and students at their institution against the national measure [33, 34]. Finding different ways to force the institution to display its DEI work in the public eye requires the institution to show humility. It helps to ensure change is implemented and upheld. Implementing this one technique will demonstrate humility and commitment to growth. This is one of many ways to hold your institution accountable.

6.9 Required DEI Training for Faculty and Staff

DEI is an encompassing term that is gaining popularity in many multicultural, forward-thinking societies and is being used increasingly among institutions of higher education. However, there is a lack of conceptual clarity as to what DEI means and how it should be taught across different countries such as the U.S., Canada, and U.K [38, 39]. In a 2003 study, the cross-cultural curricula of 19 U.S. medical schools were found to have substantial variation in volume and content [39]. Nearly 20 years later, many European medical educators did not feel adequately equipped with the knowledge nor the tools to teach about DEI concepts [40]. With this in mind, researchers from the University of San Francisco created a faculty development DEI workshop series. During the first 7 months of the program, 120 faculty members completed the series and rated it is as very likely (average 4.36 out of 5) to result in modification of their teaching about DEI topics [23]. The themes for each workshop included lessons on microaggressions, mentoring across differences, equitable assessment for students, creating and assessing curricular materials for DEI, and proactive and receptive methods to mitigate bias in medical learning. These workshops consisted of small group discussions, interactive guided self-reflection circles, case studies, demonstrations, role-play, and facilitated practice in small groups. Development of the workshop series received strong support from the positive culture around DEI at the institutions where the study took place. The authors admit that equivalent culture and resources may not be present at all institutions and, therefore, may create a challenge when developing DEI training for faculty and staff [23]. We challenge all institutions that value DEI to pursue the development and implementation of DEI training for their faculty and staff.

6.10 Zero Tolerance Programs for Micro- and Macro- Aggressions

Microaggressions are everyday insults, invalidations, and offensive behaviors that people of color experience, most commonly from well-intentioned White people who may be unaware of the meaning behind their words [41–43]. **Macroaggressions**, on the other hand, are intentional acts of discrimination that are based in systemic racism and directed at whole groups of marginalized people [41]. The important difference to understand between micro and macroaggressions is that "micro" does not mean smaller but is more focused on the aggressions happening *every day* [41, 43]. In a survey of 3361 people living in the U.S., the American Psychological Association (APA) found that 76% of Black adults reported daily discrimination through microaggressions as compared to 61% of all adults. The same survey found that being burdened with microaggressions increases stress in the lives of individuals from marginalized populations, lowers emotional well-being, and increases depression and negative feelings [44]. Without adequate training and processes to recognize and redress microaggressions, people from marginalized communities will continue to experience hostile, invalidating work environments. Derald Wing Sue and colleagues created a system to help defuse microaggressions within workplaces [41]. Their focus was on making the "invisible" visible. Micro- and macroaggressions are said to be "invisible" when the individuals perpetrating the offenses are not aware of how their words and actions are impacting others. Sue and colleagues created an intervention process that focuses on creating a plan to identify macro- and microaggressions, disarm the aggressions, educate the offender, and provide external interventions when needed [41]. Our team created the scenarios in Table 6.5 that focus on microaggressions in the medical community (i.e., patient/doctor, student/patient, faculty/staff) and how to approach these situations. Charts published in the Sue et al. (2019) study [41] inspired our design of these interventional scenarios, which our team adapted to focus on the medical education and healthcare environments. A more extensive discussion of microaggressions is presented in Chap. 3.

Table 6.5 Microaggression intervention examples

Scenario 1: *White heterosexual female physician walks into a room with a Black male patient. The physician appears anxious and positions herself near the door. She then brings a White male nurse to assist her in the room when she returns to care for the patient.* **Metacommunication:** *Black men are dangerous, and a White woman is at risk in a room alone.* **Goal:** *Make the "invisible" visible.*	
Objectives	Bring microaggressions to the forefront of the perpetrator's awareness.
Rationale	Allows targets and allies to describe what is happening in a non-threatening way.
Tactics	Undermine the metacommunication.
Example	"I am not dangerous."
Consequence of non-intervention	Increased sense of mistrust in the medical system among Black men.
Scenario 2: *A Black female medical student enters a White male SP's room to take a history. The SP appears shocked, acts nonchalant, and begins to break character when asked simple medical history questions.* **Metacommunication:** *Lack of confidence in a Black female students' ability to be a competent physician.* **Goal:** *Make the "invisible" visible.*	
Objectives	Discuss with a trusted professor or administrator the situation and indicate to the perpetrator that they behaved in a way that was offensive to you.
Rationale	Response from those in power has a greater impact on the perpetrator.
Tactics	Challenge the stereotype.
Example	"This student is a Black female. She is equally capable of being a physician as her White peers."
Consequence of non-intervention	Black students are deterred from attending medical school and becoming physicians if they must stand up for themselves and their intelligence.
Scenario 3: *A White professor is getting to know students on the first day of class by asking each student to introduce themselves. In the process of introductions, the professor asks some students of color where they are from but fails to pose the same questions to the White students.* **Metacommunication:** *Assumption that people who do not present as White are not from the United States. This can also imply that students of color are perceived as outsiders or interlopers.* **Goal:** *Make the "invisible" visible.*	
Objectives	Force the offender to notice the meaning and effect of what was said.
Rationale	Allows allies and victims to describe the incident in a non-threatening manner.
Tactics	Ask for clarification.
Example	"Professor, I am wondering why you are asking about my background but not about my fellow White classmates' background?"
Consequence of non-intervention	Students of color distrust the professor because they are aware the professor does not feel connected to them as people and perceives them as less educated and less capable.

6.11 Annual Assessments Identify Disparities and Guide Improvement

Consistent evaluation and dedication to immediate action are necessary to create an atmosphere of inclusivity. An annual assessment helps identify gaps and disparities within the institution's culture. A research team at the University of Massachusetts Medical School generated data assessing the culture of DEI within medical schools using a 22-question assessment called the Diversity Engagement Survey (DES) [32]. When designing this survey, the research team identified 8 inclusion factors that embodied the main themes addressed by the survey. These inclusion factors were: common purpose, trust, sense of belonging, appreciation of individual attributes, access to opportunity, equitable reward and recognition, cultural competence, and respect [32]. The statements aimed to address the relationship between the institution and its members. The DES was administered to 14 American medical schools between 2011–2012 with a total of 13,694 participants [32].

A key advantage identified by the research group was the ability of this survey to generate both composite and subgroup scores. The composite score was the survey score of the entire institution, while the subgroup scores looked at the scores of specific departments within the institution. Obtaining both a composite and subgroup score helps the institution to determine what type of policies need to be implemented [32]. For example, if a specific statement on the survey yields both a low composite and subgroup score, an organization-wide policy must be implemented. However, if a composite score is high, but a subgroup score is low, this identifies the need to implement a policy targeting a specific subgroup. Specific statements used in the validated DES instrument are provided in the published article and could be modified to meet an institution's specific needs. Administered annually, a climate survey like the DES may reveal the institutional community's perceptions about DEI as they evolve over time, providing data to guide implementation of policies and programs to facilitate positive change.

6.12 Summary and Conclusions

Curriculum managers and institutional administrators are key stakeholders in the quest to advance health equity by acknowledging and addressing REHD in medical education curricula. In this chapter, we have presented evidence-based strategies and checklists to guide the process.

As illustrated in Fig. 6.1, opportunities for curriculum managers can be broadly categorized into three areas: curriculum design, feedback gathering, and faculty development. Curriculum designers can integrate DEI topics into medical education curricula using longitudinal, course-specific, or distinct approaches. At the time of publication, it is unknown whether one strategy is more effective for improving physician DEI competencies and patient outcomes. Whichever strategy is used, it is imperative that race be presented as a social construct in medical education curricula. The use of race without contextualizing the historical, social, and structural determinants of health results in pathologizing race and perpetuating stereotypes. Table 6.2 describes some tools available to facilitate analysis of curricular content for implicit bias, race without social context, racism, and stereotypes.

Feedback gathering occurs at both the institutional and program managements levels. Course evaluations and annual climate surveys generate longitudinal data to document an institution's achievement of DEI goals over time. Importantly, feedback must be translated into action with the goal of continuous improvement.

Faculty development and training also occur at the institutional and program management levels. Faculty and staff should be provided opportunities for self-paced learning in safe spaces. Training should gradually progress from self-reflection and exploration to small-group discussion and classroom simulations. Recognition is an important extrinsic motivator to increase participation in training activities.

Institutional administrators have the biggest impact by building a culture of inclusivity through five steps in three key areas. Inclusive leadership must hire and retain a diverse workforce and provide mandatory DEI training for all faculty, staff, and students. Institutional policies must require zero tolerance for micro- and macroaggressions and conduct annual assessments to identify disparities and create solutions that drive positive change. Finally, institutions must hold all individuals accountable for contributing to the mission of advancing health equity.

As acknowledged in the Preface of this book, we understand that this mission is continuously evolving. The evidence-based strategies we have outlined here will also evolve as future studies establish new best practices. We hope this snapshot helps advance health equity through race-conscious medical education and we look forward to being part of the continuous improvement process.

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Chapter 7
Charting the Path Toward Health Equity by Acknowledging and Addressing REHD in Medical Education

Kristoff Aragon, Rachel M. A. Linger, and Jacqueline M. Powell

This manual serves as an instructional guide to provide healthcare educators with best practices for acknowledging and addressing racial and ethnic health disparities (REHD) in medical education. Supported by evidence-based recommendations, these chapters provide medical educators, curriculum managers, and institutions with strategies and checklists to improve their medical curricula to ensure a well-defined understanding of race and ethnicity in medicine. The goal is to promote a more diverse, equitable, and inclusive medical culture. This manual serves as a resource for healthcare educators and institutions to examine the impact of race, racism, and ethnic biases on medical care and health outcomes. By recognizing the inadequacies of the medical profession in embracing cultural humility, ensuring diverse racial and ethnic representation, and mitigating disproportionate health outcomes in underrepresented minority (URM) populations, this manual provides methods and approaches to effectively address these issues and help eliminate REHD.

The history of systemic racism has influenced the practice of medicine resulting in REHD [1]. Race has often been used to inaccurately explain differences in disease burden and health outcomes, however, as race is a social construct, it has no biological basis and is therefore not responsible for affecting disease prevalence [2, 3]. By examining the construct of race, the concepts of race-based and race-conscious

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medicine are highlighted and various scenarios are provided to distinguish the differences between these two approaches to medicine.

Semantics and understanding a similar language are important for how we interact with and comprehend the world around us. In order to effectively debunk the various stereotypes, social assumptions, and long-held misperceptions that influence the misuse of race in medical teachings, medical educators must understand the language of REHD. This requires knowledge of key concepts such as health inequity and inequality, race, ancestry, implicit bias, microaggressions, and additional terms defined in the glossary. For instance, as discussed in Chap. 2, health disparity is often defined as a difference in health prevalence and outcomes among patient demographics. This definition fails to acknowledge the context by which these disparities have occurred, which risks attributing disease burden to demographics such as race. Contextualizing REHD enables healthcare professionals to identify specific ways in which the medical practice perpetuates health inequities, and also prevents the introduction or reinforcement of biased assumptions that could pathologize race and/or ethnicity, negatively affecting patient care [2, 3]. As such, medical educators are guided by this manual to consider the effects of socioeconomic differences, environmental factors, and systemic racism with regard to healthcare participation and outcomes.

Chapter 3 provided several examples illustrating how implicit bias permeates medicine and adversely impacts clinical decision making and institutionalized practices. Longstanding structural racism plays a fundamental role in creating associations between racial identity and outcomes, ultimately resulting in implicit bias. Awareness of socioeconomic and historical contexts are necessary to minimize the influence of racism and implicit bias on clinical judgement and medical practice. Reducing REHD requires mitigating one's implicit biases by acknowledging and improving one's approach to patient management and treatment. As demonstrated by Hoffman et al. in 2016, medical students and residents were more likely to believe that Black patients had thicker skin and felt less pain than White patients [4]. This form of thinking can lead to the mismanagement of pain among Black patients, driving the false and antiquated view that biological differences exist between races. In an effort to reduce implicit bias, a race-conscious curriculum that addresses how structural inequities, historical oppression, and systemic racism shaped the disproportionate health outcomes among minoritized groups is recommended.

Diversity and inclusivity in the field of medicine is vital to reducing REHD and promoting health equity. At the institutional level, the social identities of policymakers coupled with implicit and explicit bias have significant influence on policies and practices that drive inequity [5]. Being that minority patients feel an increased sense of comfort, trust, and enhanced interpersonal care with providers of the same race or ethnicity [6], recruitment and retention of diverse students in medical education is necessary. Increasing the diversity of medical professionals requires increasing the diversity of students in health professional schools as well as diversity in the leadership of these institutions. Educational institutions should address any implicit bias interfering with the admissions and hiring processes and ensure that the campus environment does not promote racial and/or ethnic discrimination against marginalized groups. Minority students are often faced with racial microaggressions and the accumulation of these microaggressions throughout their medical training can have a negative impact on cognitive function, self-esteem, and experiences which can affect retention in the medical field [7]. Understanding the experiences of URMs in medicine can help institutions best meet the needs of their students and address systemic racism wherever it appears. Chapter 6 discussed detailed ways that institutions can promote diversity, equity, and inclusion (DEI).

Teaching about race and racism can be a sensitive subject to discuss and may produce a series of challenges that can hinder progress towards racial justice. Chapter 4 explored several hurdles that educators may face including lack of understanding of racial identity, confrontation with White resistance, and managing difficult emotions. In an effort to overcome these challenges, the framework of cultural humility and the benefits it can provide for both educators and students were discussed. Using cultural humility to discuss race invites each participant to foster a supportive environment, acknowledge limitations in their expertise of a subject, and openly listen [8].

After understanding how systemic racism and racial discrimination play a role in healthcare and disease prevalence, medical educators need to evaluate their educational materials and assessments for content that may perpetuate bias or race-based medicine. The checklists provided in Chap. 5 serve as helpful quick-reference guides for creating or updating instructional content. Recognizing that the portrayal of race and ethnicity in medical education can influence how students approach medical care for minority patients, educators should include how racism, social inequities, and social determinants of health (SDOH) contribute to disease burden rather than making the association that certain racial groups have a particular health outcome [2, 3]. The latter could make students believe that racial and ethnic minorities have biological differences that predispose them to certain diseases rather than understand that harmful systemic issues have created barriers resulting in these health disparities [2, 3]. In addition, race should not be used as a proxy to determine a diagnosis when developing a clinical vignette. As the patient population continues to grow more diverse, lecture materials should reflect this growth by ensuring descriptive findings are inclusive to URM populations and that a wide range of representative examples from various patient demographics are presented [2].

Leadership at medical institutions has a significant role in creating an environment that promotes DEI in order for their students and faculty to thrive. Chapter 6 described concrete methods that can be implemented by curriculum managers and educational administrators so as to create a culture of inclusivity. Several approaches for integrating DEI topics into a medical curriculum are explained including: (1) supplementing existing course material with DEI related topics, (2) providing an overview of DEI subjects at the beginning of each curricular unit, and (3) developing a separate course focused on DEI content. Once a plan to incorporate DEI in the curricula has been carried out, periodic assessments and course evaluations serve as necessary indicators of successes and opportunities for further improvement [9]. Delivery of DEI content and mitigation of bias is also dependent on race-conscious faculty development [10]. A safe learning environment as well as incentives can facilitate open discussions about DEI topics for faculty. Investing in training allows faculty the opportunity to understand implicit bias as well as feel more comfortable discussing difficult topics such as race and racism.

Working towards more equitable healthcare and medical education is a continuous process. We hope that this book serves as a valuable resource for medical educators and students, wherever they currently are in this journey, as they aspire to become more culturally competent, equity-minded, and inclusive healthcare educators and professionals.

7.1 Take-Home Points

- Race is a social construct without biological basis and should not be used to explain differences in disease prevalence or health outcomes without social, structural, or historical context.
- Understand the meaning of health inequity, inequality, and disparities. Learn about the historical and social inequities in place that drive disparities.
- When discussing REHD, emphasize the context for which these disparities have come about and understand that racism has been influential in perpetuating health inequities.
- Medical institutions, faculty, and staff have a responsibility to engage themselves and their students in recognizing their implicit biases and how to mitigate their effects.
- Using a cultural humility model when discussing race can encourage a safe space for participants to listen to and learn from each other. The framework allows each person to be self-reflective and contemplate their own assumptions and biases.
- A race-conscious medical curriculum explains the causes and effects of health disparities among racial and ethnic groups. It acknowledges SDOH and recognizes that social, political, and economic factors play an underlying role in causing these disparities. Adopting a race-conscious curriculum prevents future clinicians from associating certain health outcomes with race.
- Assess educational materials for content that contains bias, racism, or stereotypes and remove them.
- Incorporate DEI topics in medical education to develop culturally competent, equity-minded, and inclusive healthcare professionals.
- Institutions should invest in recruitment strategies that increase URM students, faculty, staff, and leadership. Programs that will support URM students, such as directed mentoring and cultural organizations, should also be supported.

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Addendum: Glossary of Terms

Ancestry One's genetic lineage and history.

Bias Conscious or unconscious attitudes and prejudices that may unfairly guide how people make decisions, behave, or perceive experiences around them.

Cultural competency (in medicine) A set of attitudes, knowledge, and skills that are necessary for care providers to effectively interact with culturally and ethnically diverse patient populations.

Cultural humility Lifelong process of continual reflection upon one's own cultural identity and biases with the understanding of how these factors impact interpersonal communication and professional relationships.

Discrimination A behavior perpetrated by individuals or institutions practicing inequitable or negative treatment of people from certain social groups that results in social advantages or disadvantages.

Diversity Representation in a specified setting of as many groups as exists in the general population.

Equality A uniform quantity and quality of resources is provided to everyone, regardless of circumstances.

Equity The justice that is achieved through providing the necessary opportunities and resources to reach an equal outcome by recognizing the differences in circumstances.

Ethnicity A large group of people with a shared culture, language, history, or set of traditions.

Explicit Bias Conscious awareness of prejudices, stereotypes, and attitudes that negatively guide decision-making, behaviors, or perceptions toward certain groups of people.

Health disparity Generally, considers the differences in health and health outcomes between two groups of people in a population. In this manual, we define it as the historically contextualized disproportional differences in health and health

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outcomes experienced by racial and ethnic populations due to unequal distribution of social, political, economic, and environmental resources.

Health inequality Measurable aspects of unequal, unjust, and sometimes unavoidable differences in health that vary across individuals or groups.

Health inequity Avoidable systemic and social differences in health status or in the distribution of health resources between different population groups arising from social conditions.

Implicit Bias Unconscious but learned beliefs that promote negative perceptions toward a person or group based on subjective and extraneous characteristics.

Inclusivity The practice of providing equal access and opportunities to people who would otherwise be excluded or marginalized.

Macroaggression Explicit or intentional acts of discrimination that are based in systemic racism and directed at whole groups of marginalized people.

Maternal Near Misses (MNM) Women who nearly died but survived a complication that occurred during pregnancy, childbirth, or within 42 days of termination of pregnancy. A metric that is surveyed in various countries to compare health disparities amongst different racial/ethnic groups.

Micro-affirmations Small acts in private or public settings that foster an environment for inclusion, support, and listening among people who would otherwise feel unwelcome.

Microaggression Subtle insults (verbal, non-verbal, and/or visual) directed towards people of racial or ethnic minority groups.

Microassaults Explicit racial derogation characterized primarily by a verbal or nonverbal attack meant to hurt the intended victim through name-calling, avoidant behavior, or purposeful discriminatory actions.

Microinsults Communications that convey rudeness and insensitivity and demean a person's racial heritage or identity.

Microinvalidations Communications or behaviors that exclude, negate, or nullify the psychological thoughts, feelings, or experiential reality of a person of color.

Modern racism or aversive racism Racist actions that are covert and ambiguous, making them more challenging to identify and address.

Nationality Citizenship of a particular country.

Race A social category constructed by socioeconomic and political forces that determine its content and importance.

Racial and Ethnic Health Disparities (REHD) Adverse differences in health affecting individuals who are systematically faced with greater barriers to adequate care due to their racial or ethnic group.

Racism Beliefs, attitudes, institutional arrangements, and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic group affiliation.

Redlining US federal government housing program established in the 1930s that provided and secured housing to White middle and lower-class families by legalizing the exclusion, racial segregation, and discrimination against Black families and other non-White communities.

Social Determinants of Health (SDOH) Factors that generate health disparities such as (but not limited to): socioeconomic statuses, geographical locations, and sociopolitical impacts that can affect one's health, functioning, and quality of life outcomes and risks.

Structural Racism A system in which structures that uphold societal systems (laws, public policies, institutional practices, cultural representations, and other social norms) create, perpetuate, and reinforce racial group inequity.

Systemic racism Racism that involves and is often embedded in all systems of a society (social, economic, political, legal, health care, school, and criminal justice systems).

Trans-Atlantic Slave Trade Transport of enslaved African populations, mainly to the Americas, by slave traders from the 16th to the 19th centuries. In this manual, it is used as a framework to understand the global impact of slavery on current-day health disparities.

White fragility Any amount of trigger of racial stress for White people causing a range of emotional and behavioral reactions to combat the internal challenge of being seen as immoral individuals connected to racism.

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