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Antiracism in the Field of Neonatology: A Foundation and Concrete Approaches

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Abstract

Neonatal patients and families from historically marginalized and discriminated communities have long been documented to have differential access to health care, disparate health care, and as a result, inequitable health outcomes. Fundamental to these processes is an understanding of what race and ethnicity represent for patients and how different levels of racism act as social determinants of health. The NICU presents a unique opportunity to intervene with regard to the detrimental ways in which structural, institutional, interpersonal, and internalized racism affect the health of newborn infants. The aim of this article is to provide neonatal clinicians with a foundational understanding of race, racism, and antiracism within medicine, as well as concrete ways in which health care professionals in the field of neonatology can contribute to antiracism and health equity in their professional careers.

PRACTICE GAP

Concrete interventions that advance antiracism within the field of neonatology are required to address neonatal racial/ethnic health inequities and improve care and outcomes for historically marginalized patients and families.

INTRODUCTION

Although the role of racism in every aspect of life in the United States has been well-researched and documented for decades, (1)(2) the murder of George Floyd on May 25, 2020, ignited a cultural movement in American society to address systemic racism in concrete ways. (3) Antiracism, the process of actively identifying and opposing racism, can be applied to all fields of medicine, including neonatology. (4) In this article, we provide a comprehensive (though not exhaustive) compendium of possible approaches neonatologists and other neonatal health care professionals may take to conduct antiracist work throughout many aspects of their careers.

BACKGROUND AND RATIONALE FOR ANTIRACIST WORK

Racism and Social Determinants of Health

According to the Centers for Disease Control and Prevention Healthy People 2030 report, “Social determinants of health (SDOH) are the conditions in the environments where people

are born, live, learn, work, play, worship, and age that affect a wide range [of healthcare], health [outcomes], functioning, and quality-of-life outcomes and risks.” (5) SDOH can be grouped into 5 major domains: 1) economic stability; 2) education access and quality; 3) health care access and quality; 4) neighborhood and built environment; and 5) social and community context. Recognition of SDOH can lead to a better understanding of how social context affects biologic risks and outcomes. (5)

A focus solely on “determinants,” however, fails to recognize that the distribution of SDOH among the population is not random. (6) Instead, social, economic, and political systems distribute these “determinants” inequitably across the population. Black, indigenous, and people of color are more likely to experience reduced access to health care, receive care in lower quality hospitals, live in neighborhoods with more risks and fewer resources, have increased exposure to environmental pollution, be overcriminalized, and have diminished access to employment and wealth opportunities. (7)(8) The inequitable, racialized distribution of SDOH in the United States highlights the prominent role of racism as a key factor in SDOH. (9)

Race is a social construct and has no basis in genetics or biology. (10)(11) Race emerged as a concept when European explorers encountered individuals in the “New World,” and sought to establish a human classification system, defined by physical appearance and skin color, to construct hierarchies of power and consolidate power in the dominating group (white race). (10)(12) As noted by the evolving classifications of race in the United States census, race is not biologic, genetic, or natural, but instead evolving and responsive to sociopolitical forces that continue to reinforce and normalize whiteness as dominant over all other groups. (13)

Racism refers to the discrimination, marginalization, and/or oppression of people of color through the use of policies, ideas, and actions that differentially structure opportunity, behavior, and risk for nonwhite individuals. As defined by leaders in the field including epidemiologist and physician Dr Camara Jones, racism creates a system that restricts the lives of nonwhite individuals and communities while creating advantage for white communities. (1)(14)(15) Dr Jones defined 3 types of racism: 1) institutional, 2) interpersonal, and 3) internalized. (16) More recently, others have defined structural racism separately from institutional racism. (17) *Structural racism* is the “totality of ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, healthcare, and criminal justice.” (18) The inequitable distribution of police violence and killing of black men, women, and children, the disproportionate number of incarcerated black and Hispanic/Latinx individuals compared to white individuals, and the lack of representation in media, all represent forms of structural racism.

Institutional racism refers to the “processes of racism that are embedded in laws . . . , policies, and practices” within specific societal institutions. (19) For example, *de jure* housing discrimination (ie, “redlining”) codified inequitable access to mortgages for homeownership, thereby restricting subsequent wealth attainment and upward mobility. (20)(21) Institutional and structural racism, through their normalization of a racialized world, are not actively

inflicted by individual perpetrators. Similarly, complicity in the system may not be immediately apparent. (16)(18)

Interpersonal racism refers to personally mediated prejudice, assumptions, beliefs, and discrimination, as well as differential behaviors and actions, based on race. Interpersonal racism can be intentional or unintentional. Microaggressions experienced by health care professionals of color due to implicit biases, such as when a clinician of color's presence or title is questioned, are an example of interpersonal racism. (22)

Finally, *internalized racism* is defined by members of minoritized groups accepting "negative messages about their own abilities and intrinsic worth." (16)(18) These 4 pillars of racism work together to perpetuate and normalize race-based inequity, including in the inequitable distribution of SDOH.

As a result of racism in its many forms, racial and ethnic inequities, unexplained by genetic associations, exist in perinatal and neonatal health and health care. Black infants are more than twice as likely to die in the first year of age compared to their white counterparts, and the gap is widening. (23) Pregnant patients who identify as black or Hispanic/Latinx receive care in lower quality hospitals and have higher rates of preterm birth and low birthweight infants. (24) Black and Hispanic/Latinx infants admitted to NICUs have been shown to receive lower quality of care, have lower patient satisfaction scores, and have decreased rates of postdischarge high-risk infant follow-up. (25)(26)(27)(28)(29)(30)(31)(32)(33)(34)(35) Studies have begun to explore how the inequitable racialized distribution of the SDOH, as a result of racism, explains these inequities. (23)(36)(37)(38)(39)(40)(41)(42)(43)

Conceptual Understanding of Antiracism

Antiracism has been defined most prominently by the historian Dr Ibram Kendi as support for and concrete actions toward the creation of policies aimed at dismantling ideas and structures that produce and normalize racial inequalities. (1) The concept of antiracism tackles the historical and present-day inertia that has allowed entrenchment of racism throughout society. (44) It recognizes that societal problems are rooted in power structures and policies rather than individuals or groups of people. Antiracism embodies an active process to redistribute and equitably share power by changing systems, organizational structures, funding, policies, practices, leadership, and culture. (45) The emphasis is on naming racist policies and actions and taking active steps for change rather than stances, statements, or generalizations. (46)

Applying antiracism in medicine is considered not only a moral imperative but also an efficient one that can help ensure that every aspect of health care, from clinical practice to public health to medical innovation, is equitable. (45) However, the application of antiracism in medicine requires a recognition of the role racism plays in the lives of individual health care professionals as well as within health care systems. (47) Ownership of the many avenues by which racism adversely affects health is fundamental to antiracist work within medicine. This article will describe how to operationalize antiracism in neonatology.

The NICU as an Optimal Setting for Antiracist Work

The field of neonatology is particularly well-suited for antiracist work for 3 main reasons. First, racial/ethnic disparities in fetal and infant health outcomes have been well-described for decades, and both have a major impact across the lifespan and contribute to lifelong health inequities. (48)(49) Many SDOH that are concentrated in black, indigenous, and people of color communities affect the risk of preterm birth and low birthweight, (50) which in turn drive disparities in infant mortality in the population. (51) Mitigating racial/ethnic disparities in perinatal and infant health outcomes requires an understanding of the downstream pathophysiology that leads to preterm labor, preeclampsia, poor fetal growth, and infant death. Neonatologists and other neonatal health care professionals have extensive clinical and academic expertise in these pathophysiologic processes as well as the care of newborns that can be leveraged to ensure the validity of research questions and interventions that aim to address infant health disparities. However, to do so, neonatal physicians and other clinicians must engage in this type of research and implementation science.

Second, racially minoritized families face disproportionate exposure to the NICU setting given the high rates of preterm birth and low birthweight in these communities. Having an infant in the NICU can cause significant parental stress and trauma. (52)(53) However, this stress is further compounded by ongoing stressors related to socioeconomic status (54) and financial insecurity, interpersonal discrimination, and other SDOH. (42)(55) The association between chronic stress and adverse health outcomes—including racial/ethnic disparities in birth outcomes—is well-documented. (56) Therefore, recognizing, acknowledging, and addressing such intersectional stressors, many of which are deeply rooted in structural, institutional, and interpersonal racism, is antiracist work.

Finally, the NICU experience occurs during a critical phase of infant development as well as the development of the parent-infant dyad relationship. Given the existing and ever-increasing knowledge about the impact of early life adversity on neural, endocrine, immune, metabolic, and epigenetic processes, (42)(53) antiracist interventions in the NICU have the potential to improve long-term health trajectories for patients and their families. This is especially true if interventions are based on an equitable “follow-through” approach that recognizes the responsibility of NICU professionals toward addressing SDOH for infants even after discharge from the NICU. (57) The NICU stay thus represents an opportunity to intervene on systemically racist structures, institutionally racist policies, and interpersonal instances of implicit and explicit bias that may be affecting entire families.

APPLICATION OF ANTIRACISM TO NEONATAL HEALTH CARE

Neonatal professionals can contribute to antiracism regardless of the roles they play in academic and health care settings (Fig 1). Below are concrete strategies that could be explored within each sector of neonatal medicine.

Antiracism in Medical Education

Contributing to antiracism through education can be accomplished in 3 main ways: through continual self-education; through the creation of new curricula for medical students,

trainees, and staff; and through reform of existing structures and processes in medical education. To begin, self-education is fundamental and requires an acknowledgment that gaps in one's personal understanding may exist either because of lack of awareness or because of implicit biases. Scholars had been writing and speaking about the historical and present-day impact of racism on health care and health outcomes long before the increased social awareness movement of 2020. (16)(58)(59) However, the past year has led to a flourishing of such literature and multimedia resources. Professional organizations, including the American Academy of Pediatrics, have created compilations of primary and secondary data, (60) published policy statements, (61) and released podcast material (62) intended to educate readers and listeners about the impact of racism on pediatric health.

Such material can be used to not only "teach the teachers" within health care and medicine, but also to develop longitudinal curricula for medical students, trainees, and staff. There remains a dearth of evidence as to best practices for how to incorporate concepts of racism, bias, and antiracism into medical curricula. (63)(64) This includes training on how to respond when micro- and macroaggressions related to discrimination and racism are witnessed in the medical workplace so that medical personnel feel empowered and knowledgeable to function as involved "upstanders" rather than passive bystanders. (65) (66) However, such curricula must be implemented broadly in medical schools, residency, and fellowship programs, as well as graduate health care programs for nurses, respiratory therapists, physical and occupational therapists, and other health care clinicians. This includes not only education of new staff in all these arenas but also in continuing education programs and maintenance of certification curricula. Much work remains to be done in this arena. A recent analysis of pediatric general and subspecialty board examination content specifications revealed that only 2 subspecialty content specifications addressed implicit bias. (67) Within the American Board of Pediatrics (ABP) preparatory information provided for the neonatal-perinatal medicine certification examination, only 2 of 875 content specifications currently address issues of race, ethnicity, and health. (67) One is worded as knowing the relationship between the ethnic origin of the parents and risk for specific genetic conditions in an infant. The second asks learners to know the range of normal serum bilirubin concentration and the effects of an infant's age, race, and feeding circumstances on serum bilirubin. To date, no pediatric examination content specifications address racism in any form as a contributor to health outcomes.

Neonatal medicine educators can also engage in antiracism by reforming current ways in which students are taught to think about the relationship between race/ethnicity and health. The 2 ABP neonatal-perinatal medicine content specifications that currently allude to race test physiologic associations based on race; they do not test for an understanding of the root causes of race functioning as a risk factor for pathology. (67) Genetic explanations for racial disparities in disease are common in medical curricula despite the growing understanding of race as a sociocultural construct and imperfect proxy for social determinants of both health and ancestry. (68)(69) Indeed, race is commonly misrepresented in medical curricula and examination preparatory materials such as widely used question banks, as it is usually presented in imprecise uncontextualized ways that pathologize racial groups themselves. (68)(70) For instance, students may be taught that black patients have higher rates of hospital readmission without discussion of the underlying structural causes

for these disparities or they may observe African patients being incorrectly described as African American. Both of these examples have the potential not only to miseducate but also to perform microaggressions against black learners. (70) Thus, neonatal medical educators have significant opportunities to critically examine existing curricula, correct previous educational missteps, and create new content that reflects a more accurate and thus useful understanding of race and ethnicity and how it relates to neonatal and infant health outcomes. The ABP recently amended its strategic plan, adopted an antiracist action agenda that targets these previous educational shortcomings, and is working to implement new action steps aimed at antiracism within pediatrics. (71) Participation of neonatal professionals in such reforms will be crucial.

Antiracism in Clinical Care

Incorporating antiracism in clinical care fundamentally requires an understanding of the causal pathways by which racism, segregation, and inequality affect both the care we offer infants and the health outcomes they experience. In a seminal piece discussing interventions to reduce racial/ethnic inequities in preterm birth, Beck and colleagues propose concrete strategies to address the 3 main causal pathways they identified. One strategy to address the disproportionate preterm birth risk among black patients is equitable access to high-quality prenatal care for high-risk patients with maternal-fetal medicine physicians who can provide therapies, such as cerclage, when indicated. (42) To address the socioeconomic disadvantage NICU families disproportionately experience, neonatal programs could work on bolstering discharge planning and early intervention programs. Finally, NICUs might begin to address the lower quality of care minoritized infants have been shown to receive (30)(32) by instituting disparity dashboards to track care delivery and outcomes by the race, ethnicity, and preferred language of an infants' family (often referred to as REaL data). (72)

Clinical dashboards that display REaL data can assist NICUs in ensuring that existing and new algorithms do not inadvertently perpetuate or widen disparities in quality of care or outcomes. Such “intervention-generated inequalities” have been found among adult inpatients and after certain major public health campaigns but are poorly studied in neonatology. (73) Clinical algorithms used for diagnostic or management purposes that adjust or correct for race may be even more problematic, as there is evidence that these may contribute to new disparities and inequities in access to care and outcomes. (74) Racial/ethnic standards for fetal growth are 1 example in the field of perinatology where race-based corrections exist. (75) It has been posited that racial/ethnic corrections for fetal growth rate patterns may be masking underlying socioeconomic and sociopolitical factors that affect fetal growth, which may contribute to birthweight disparities. (76) Such questions are critical for neonatal clinicians to consider, study, and address.

Antiracism in Quality Improvement

As with diagnostic algorithms or practice guidelines, quality improvement (QI) initiatives have the potential to leave disparities unchanged or widen them, especially if stratified data are not monitored. (77) QI offers a compelling approach to improve disparities with targeted antiracist, inclusive interventions, aiming to reduce a disparity. Specifically, equity-focused quality improvement (EF-QI) (73) offers an action-oriented framework whereby

equity is integrated throughout a QI initiative at every stage to address a disparity, from the development of a smart aim to identifying drivers to designing and testing change ideas.

After identifying a disparity, intentionality in mapping key stakeholders to include patients, families, and relevant community partners, with a focus on the group(s) experiencing the disparity, is critical to EF-QI. Stakeholders collaboratively brainstorm root causes focusing on systems, processes, and policies, specifically identifying sources of structural racism. (78) These reflective and in-depth discussions among stakeholders can help QI teams design and prioritize targeted antiracist interventions centered around the patient and family voice. EF-QI initiatives are essential to further a culture of equity and antiracism and place the value of equity similar to that assigned to patient safety.

For example, black-white disparities in breastfeeding rates have been widely documented in the literature and locally in individual units, prompting several QI initiatives aimed to improve breastfeeding rates, especially among black patients who are experiencing this disparity. (31)(79) A multidisciplinary stakeholder group is assembled, including patients who identify as black or African American and community partners who are dedicated to empowering and serving black patients. Qualitative work and interdisciplinary discussions on root causes, specifically drivers of racism and bias within the health care system, inform potential interventions that are subsequently prioritized with stakeholder input. This process centered around the lived experience of black patients and community partners helps teams develop targeted, antiracist interventions that can be tested and refined through plan-do-study-act cycles and potentially implemented in the future.

Antiracism in Research

Although there has been an explosion of health disparities literature in the last decade, research has predominantly focused on identifying or understanding disparities. (80) Conversely, research aimed at achieving health equity, especially in the field of pediatrics, has significantly lagged. (80) Antiracism in research requires an understanding that conducting studies focused on exploring health disparities is not necessarily synonymous with anti-racist health equity-driven research. That is because health equity requires the creation and application of concrete goals and processes to move society toward the elimination of health disparities. (80) This requires prioritizing “third- and fourth-generation” research that seeks to solve existing disparities and evaluate the effectiveness of interventions, respectively. (81)

Antiracist research requires thoughtful use of race as a variable in human studies. Clear standards for how to use race in research studies are lacking and as such, it has been frequently interrogated in ways that are conflicting, ineffective, and even misleading. (82) Race and the related, though distinct, concept of ethnicity, are important variables that must be understood as proxies for socioenvironmental systems, processes, interactions, opportunities, or ancestral heritages that are more challenging or impossible to measure. (69) (82) Until recently, there has been no expectation that scientists and authors state the reasons for exploring racial/ethnic differences in their study outcomes, or name what upstream driver of health might be represented as a proxy by race. (82) Given the increasing realization of the dangers of such uncontextualized research questions in upholding racial health inequities

or even bolstering implicit bias, some journals have begun to update guidelines with respect to reporting on race and ethnicity. (83)(84)(85)

Neonatal researchers should ensure that conceptual frameworks are grounded by an understanding not only of what race may be serving as a proxy for but also that they are informed by the academic experience of scholars of color and the lived experiences of people of color. (82)(86) Work framed in this way is critically needed in the perinatal space; there are many unanswered questions regarding the impact of racism on neonatal health care delivery and neonatal outcomes. Few articles specifically examine racism in the NICU, (36)(73)(87) and none evaluate best practices or interventions for how to dismantle structural, institutional, interpersonal, or internalized racism that affect NICU patients and their families. Finally, antiracist research also necessitates that findings be connected back to the communities and people whose lives the study aimed to describe or improve. (80) Science dissemination efforts are critically important to antiracist research, both for the purposes of feedback and also to increase the likelihood that scientific findings translate into measurable changes in peoples' lives.

Antiracism in Academic and Health Care Administration

One of the most important ways to engage in antiracist work in a health care setting or academic institution is by diversifying every level of the workforce. The benefits of diversifying the medical workforce are well-documented: it increases group performance; (88) promotes cultural awareness and humility; increases access to racially and culturally concordant care; increases overall health care coverage of marginalized patient populations; mitigates provider bias issues; and improves patient experiences and satisfaction in health care systems. (89)(90)(91) In short, creating a diverse workforce is foundational to repairing the hard-earned mistrust of medicine and institutional health care that exists among many minoritized communities. (89)(91) It is important to remember that there are various mechanisms that interrelate to create a nondiverse workforce; in particular, administrative committees should examine whether they are experiencing low applicant diversity, appointment biases, departure biases, or a combination of all 3. (88) Addressing retention issues and departure biases in particular will require critical evaluation of the workplace culture that exists within divisions and an acknowledgment that micro- and macroaggressions are a common experience for people of color in health care. (92) Each of these factors will require its own distinct set of strategies along with leadership buy-in to enact such strategies, including protected, recognized time to do so, especially given how often underrepresented minoritized health care professionals and academicians get called to do such work at the expense of time for their own individual career goals and promotion metrics. (93) It will also require a distinct look at the diversity of people in subsectors of a division or department, such as the diversity of those who hold leadership positions, receive lecture invitations, or are invited to sit on expert panels.

Documenting both historical and ongoing trends in workforce diversity is an important first step. A survey conducted in 2018 of over 500 neonatologists across the country found that only 10% self-identified as belonging to a racial/ethnic group that is underrepresented in medicine. (94) According to the most recent data released by the Accreditation Council

for Graduate Medical Education, the percentage of neonatal-perinatal medicine fellows in the 2019–2020 academic year who self-identify as a race or ethnicity underrepresented in medicine was 14%; disaggregated data show an especially severe lack of representation from American Indian/Alaska Native and Native Hawaiian/Pacific Islander communities (Fig 2). (95) However, these cross-sectional data belie the fact that the proportion of underrepresented minoritized neonatal-perinatal medicine fellows may be diminishing over time, as was shown by Montez et al in a recent examination of racial/ethnic trends among pediatric trainees from 2007 to 2019. (96)

Finally, workplace diversity does not exclusively apply to physicians in neonatology but also to all health care personnel (or staff) within our field. Given the critical roles that all members of large neonatal multidisciplinary teams play, workforce diversification should also be prioritized among advanced practice professionals, nurses, pharmacists, respiratory therapists, occupational/physical/speech therapists, social workers, lactation consultants, dietitians, and all other allied health professionals. Administrative committees should thus endeavor to collect and continuously track more comprehensive data on the diversity of all personnel who work in NICUs.

Another critical venue for antiracist work is academic reform, specifically the paths to promotion, tenure patterns, and existing success metrics. Racial/ethnic disparities in scientific publications, teaching evaluations, and extramural funding have contributed to the lack of diversity in senior positions in academic medicine and health care institutions. (97) (98) This may be due in part to the “minority tax” experienced by many underrepresented faculty, which refers to the time spent assisting with institutional diversity, equity, and inclusion work at the expense of time invested in other activities traditionally prioritized by promotion and tenure committees. (93) Relatedly, underprioritization and underfunding of the advocacy, service, mentorship, community outreach, and media/dissemination efforts that underrepresented minoritized individuals are more likely to conduct can also affect their long-term academic success to the detriment of diversity goals in academic medicine. (97) The ongoing COVID-19 global pandemic has highlighted the need for clear public health messaging, strong community engagement, and trust-building efforts between the medical community and the lay public. (99) As such, these types of activities merit comparable consideration and weighting by promotion and tenure committees. (97) Neonatal divisions can evaluate metrics of success and search for evidence of disproportionate penalization of their underrepresented team members with respect to service, promotion, or compensation. However, this will require departmental/unit-wide buy-in. Prioritizing the antiracist work that neonatologists and other neonatal health care professionals are doing through academic policy reform is antiracist work itself.

Antiracism via Community Engagement

Central to antiracist work is the lived experiences of the groups experiencing racism. The voices of racialized families and community stakeholders are thus essential to making antiracist projects authentic and effective. (100) Projects can (and often do) miss the mark when such perspectives are not incorporated at every step, beginning with project conception. Furthermore, NICU parents may be particularly motivated to participate in

research as a way to cope with their own experiences and contribute to positive change. (101) However, meaningfully integrating families and community partners into scholarly projects requires 2 main components. The first is to take concrete steps to create an inclusive environment to ensure that stakeholders feel valued, respected, and welcome. This may require eliciting feedback about ways in which academic or health care environments have not felt inclusive in the past. Secondly, antiracist integration of community partners also means that all stakeholders benefit from the work in tangible and intangible ways. For instance, family and community partners could be included as coauthors on abstracts, talks, and scientific papers. Most importantly, they should be compensated for their time, expertise, and perspectives. This will entail building in funding for such compensation into departmental budgets and grant proposals. For example, funders can formalize an expectation of including family and community stakeholders by requiring applicants to describe how they will collaborate with and compensate diverse community members as research partners. (86)

Importantly, family and community alliances can help bridge the differences between health care sectors and the communities experiencing racism in ways that build trust and ensure academic projects and institutional initiatives are responding to community needs in safe and respectful ways. Community collaborations have been most widely used by the primary care sector. (102) However, neonatologists and other neonatal care professionals engaged in research, policy, and QI work can and must begin to conceptualize ways in which diverse family and community voices can be included to improve upon the perinatal work undertaken in hospitals, newborn nurseries, and NICUs. For instance, the perspectives of minoritized outpatient doulas, lactation consultants, birthing support people, and birth parents can be invaluable to EF-QI initiatives aimed at improving inpatient postpartum breastfeeding support. (79) Ultimately, collaboration with family and community stakeholders can bolster every aspect of antiracist work discussed in previous sections if concrete steps are taken to ensure that it is done in an equitable, inclusive, and just manner.

CONCLUSIONS

Racism affects health and health care in various ways, from macrostructural forces related to governmental policies down to the ways in which interpersonal discrimination and bias become internalized in individuals and communities of color. The field of neonatology and the care provided to infants in newborn nurseries and NICUs are not immune to these processes; rather, a comprehensive view of racism helps explain the pervasive and recalcitrant perinatal and neonatal health disparities that exist among minoritized communities. As such, it is incumbent upon neonatologists and other neonatal professionals to acknowledge, understand, and intervene on the various pathways by which racism affects health. Actions and interventions that tackle racism at all 4 levels (structural, institutional, interpersonal, and internalized) can be incorporated into all aspects of work undertaken by all neonatal health care professionals in practical and measurable ways (Fig 3). (3) When such work is approached with an attitude of cultural humility that prioritizes lifelong self-evaluation and critique, rather than an expectation of learned cultural competency, (103) the impact is magnified. In short, choosing to integrate antiracism into the work

we do for infants is synergistic to our field's mission to provide high-quality, equitable, family-centered care to optimize outcomes.

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ABBREVIATIONS

ABP	American Board of Pediatrics
EF-QI	equity-focused quality improvement
QI	quality improvement
REaL	race, ethnicity, and language
data	data
SDOH	social determinants of health

References

1. Kendi IX. *How to Be an Antiracist*. New York, NY: Random House Publishing Group; 2019
2. Salter PS, Adams G, Perez MJ. Racism in the structure of everyday worlds: a cultural-psychological perspective. *Curr Dir Psychol Sci*. 2018;27(3):150–155
3. Burke MG. Moving beyond the statements: the need for action to address structural racism at predominantly white institutions. *Internat J Multidisc Perspect Higher Educ*. 2020;5(1):174–179
4. Khazanchi R, Crittenden F, Heffron AS, Cleveland Manchanda EC, Sivashanker K, Maybank A. Beyond declarative advocacy: moving organized medicine and policy makers from position statements to anti-racist praxis. Available at: <https://www.healthaffairs.org/doi/10.1377/hblog20210219.107221/full/>. Accessed October 11, 2021
5. US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Social determinants of health. Available at: <https://health.gov/healthypeople/objectives-and-data/social-determinants-health> Accessed October 11, 2021
6. Krieger N. *Epidemiology and the People's Health: Theory and Context*. Oxford, UK; Oxford University Press; 2011
7. Williams DR, Cooper LA. Covid-19 and health equity—a new kind of “herd immunity.” *JAMA*. 2020;323(24):2478–2480 [PubMed: 32391852]
8. Nguemeni Tiako MJ, South EC, Burris HH. Lethality of racism for Black children in the USA: a primer [published online ahead of print January 8, 2021]. *Arch Dis Child*. doi: 10.1136/archdischild-2020-320139
9. Yearby R Structural racism and health disparities: reconfiguring the social determinants of health framework to include the root cause. *J Law Med Ethics*. 2020;48(3):518–526 [PubMed: 33021164]
10. Krieger N A glossary for social epidemiology. *Epidemiol Bull*. 2002;23(1):7–11
11. Fraiman YS, Wojcik MH. The influence of social determinants of health on the genetic diagnostic odyssey: who remains undiagnosed, why, and to what effect? *Pediatr Res*. 2021;89(2):295–300 [PubMed: 32932427]
12. Michael Oakes J, Kaufman JS. *Methods in Social Epidemiology*. New York, NY: John Wiley & Sons; 2017

13. Nobles M History counts: a comparative analysis of racial/color categorization in US and Brazilian censuses. *Am J Public Health*. 2000;90(11):1738–1745 [PubMed: 11076243]
14. Krieger N Does racism harm health? Did child abuse exist before 1962? On explicit questions, critical science, and current controversies: an ecosocial perspective. *Am J Public Health*. 2003;93(2):194–199 [PubMed: 12554569]
15. Jones CP. Toward the science and practice of anti-racism: launching a national campaign against racism. *Ethn Dis*. 2018;28(suppl 1):231–234 [PubMed: 30116091]
16. Jones CP. Levels of racism: a theoretic framework and a gardener’s tale. *Am J Public Health*. 2000;90(8):1212–1215 [PubMed: 10936998]
17. Racial and Social Justice Initiative. Types of racial inequality. Available at: <https://www.seattle.gov/Documents/Departments/RSJI/Defining-racism.pdf> Accessed October 11, 2021
18. Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet*. 2017;389(10077):1453–1463 [PubMed: 28402827]
19. Williams DR, Lawrence JA, Davis BA. Racism and health: evidence and needed research. *Annu Rev Public Health*. 2019;40:105–125 [PubMed: 30601726]
20. Bailey ZD, Feldman JM, Bassett MT. How structural racism works: racist policies as a root cause of U.S. racial health inequities. *N Engl J Med*. 2021;384(8):768–773 [PubMed: 33326717]
21. Rothstein R *The Color of Law: A Forgotten History of How Our Government Segregated America*. New York, NY: Liveright Publishing; 2017
22. Sue DW, Capodilupo CM, Torino GC, et al. Racial microaggressions in everyday life: implications for clinical practice. *Am Psychol*. 2007;62(4):271–286 [PubMed: 17516773]
23. Matoba N, Collins JW Jr. Racial disparity in infant mortality. *Semin Perinatol*. 2017;41(6):354–359 [PubMed: 28864275]
24. Martin JA, Hamilton BE, Osterman MJK, Driscoll AK. Births: Final Data for 2018. *Natl Vital Stat Rep*. 2019;68(13):1–47
25. Glazer KB, Sofaer S, Balbierz A, Wang E, Howell EA. Perinatal care experiences among racially and ethnically diverse mothers whose infants required a NICU stay. *J Perinatol*. 2021;41(3):413–421 [PubMed: 32669647]
26. Horbar JD, Edwards EM, Greenberg LT, et al. Racial segregation and inequality in the neonatal intensive care unit for very low-birthweight and very preterm infants. *JAMA Pediatr*. 2019;173(5):455–461 [PubMed: 30907924]
27. Howell EA, Janevic T, Hebert PL, Egorova NN, Balbierz A, Zeitlin J. Differences in morbidity and mortality rates in Black, White, and Hispanic very preterm infants among New York City hospitals. *JAMA Pediatr*. 2018;172(3):269–277 [PubMed: 29297054]
28. Janevic T, Zeitlin J, Auger N, et al. Association of race/ethnicity with very preterm neonatal morbidities. *JAMA Pediatr*. 2018;172(11):1061–1069 [PubMed: 30208467]
29. Lake ET, Staiger D, Horbar J, Kenny MJ, Patrick T, Rogowski JA. Disparities in perinatal quality outcomes for very low birth weight infants in neonatal intensive care. *Health Serv Res*. 2015;50(2):374–397 [PubMed: 25250882]
30. Liu J, Parker MG, Lu T, et al. Racial and ethnic disparities in human milk intake at neonatal intensive care unit discharge among very low birth weight infants in California. *J Pediatr*. 2020;218:49–56.e3 [PubMed: 31843218]
31. Parker MG, Gupta M, Melvin P, et al. Racial and ethnic disparities in the use of mother’s milk feeding for very low birth weight infants in Massachusetts. *J Pediatr*. 2019;204:134–141.e1 [PubMed: 30274926]
32. Profit J, Gould JB, Bennett M, et al. Racial/ethnic disparity in NICU quality of care delivery. *Pediatrics*. 2017;140(3): e20170918 [PubMed: 28847984]
33. Sigurdson K, Morton C, Mitchell B, Profit J. Disparities in NICU quality of care: a qualitative study of family and clinician accounts. *J Perinatol*. 2018;38(5):600–607 [PubMed: 29622778]
34. Swearingen C, Simpson P, Cabacungan E, Cohen S. Social disparities negatively impact neonatal follow-up clinic attendance of premature infants discharged from the neonatal intensive care unit. *J Perinatol*. 2020;40(5):790–797 [PubMed: 32203182]

35. Wallace ME, Mendola P, Kim SS, et al. Racial/ethnic differences in preterm perinatal outcomes. *Am J Obstet Gynecol.* 2017;216(3): 306.e1–306.e12 [PubMed: 27865977]
36. Janevic T, Zeitlin J, Egorova NN, et al. Racial and economic neighborhood segregation, site of delivery, and morbidity and mortality in neonates born very preterm. *J Pediatr.* 2021;235:116–123 doi: 10.1016/j.jpeds.2021.03.049 [PubMed: 33794221]
37. Burris HH, Hacker MR. Birth outcome racial disparities: a result of intersecting social and environmental factors. *Semin Perinatol.* 2017;41(6):360–366 [PubMed: 28818300]
38. Murosko D, Passerella M, Lorch S. Racial segregation and intraventricular hemorrhage in preterm infants. *Pediatrics.* 2020;145(6):e20191508 [PubMed: 32381625]
39. Salow AD, Pool LR, Grobman WA, Kershaw KN. Associations of neighborhood-level racial residential segregation with adverse pregnancy outcomes. *Am J Obstet Gynecol.* 2018;218(3):351.e1–351.e7 [PubMed: 29421603]
40. Sudhinaraset M, Woofter R, Young MT, Landrian A, Vilda D, Wallace SP. Analysis of state-level immigrant policies and preterm births by race/ethnicity among women born in the US and women born outside the US. *JAMA Netw Open.* 2021;4(4):e214482 [PubMed: 33825841]
41. Scott KA, Britton L, McLemore MR. The ethics of perinatal care for black women: dismantling the structural racism in “mother blame” narratives. *J Perinat Neonatal Nurs.* 2019;33(2):108–115 [PubMed: 31021935]
42. Beck AF, Edwards EM, Horbar JD, Howell EA, McCormick MC, Pursley DM. The color of health: how racism, segregation, and inequality affect the health and well-being of preterm infants and their families. *Pediatr Res.* 2020;87(2):227–234 [PubMed: 31357209]
43. Pabayo R, Ehntholt A, Davis K, Liu SY, Muennig P, Cook DM. Structural racism and odds for infant mortality among infants born in the United States 2010. *J Racial Ethn Health Disparities.* 2019;6(6):1095–1106 [PubMed: 31309525]
44. Yousif H, Ayogu N, Bell T. The path forward: an antiracist approach to academic medicine. *N Engl J Med.* 2020;383(15):e91 [PubMed: 32961043]
45. Crear-Perry J, Maybank A, Keeys M, Mitchell N, Godbolt D. Moving towards anti-racist praxis in medicine. *Lancet.* 2020;396(10249):451–453 [PubMed: 32687809]
46. Choo E Seven things organisations should be doing to combat racism. *Lancet.* 2020;396(10245):157 [PubMed: 32682470]
47. Legha RK, Williams DR, Snowden L, Miranda J. Getting our knees off Black people’s necks: an anti-racist approach to medical care. Available at: <https://www.healthaffairs.org/doi/10.1377/hblog20201029.167296/full/>. Accessed October 11, 2021
48. Lu MC, Halfon N. Racial and ethnic disparities in birth outcomes: a life-course perspective. *Matern Child Health J.* 2003;7(1):13–30 [PubMed: 12710797]
49. Fuentes-Afflick E, Perrin JM, Moley KH, Díaz Á, McCormick MC, Lu MC. Optimizing health and well-being for women and children. *Health Aff (Millwood).* 2021;40(2):212–218 [PubMed: 33476200]
50. Kramer MR, Hogue CR. What causes racial disparities in very preterm birth? a biosocial perspective. *Epidemiol Rev.* 2009;31: 84–98 [PubMed: 19477907]
51. Wallace M, Crear-Perry J, Richardson L, Tarver M, Theall K. Separate and unequal: structural racism and infant mortality in the US. *Health Place.* 2017;45:140–144 [PubMed: 28363132]
52. Sabnis A, Fojo S, Nayak SS, Lopez E, Tarn DM, Zeltzer L. Reducing parental trauma and stress in neonatal intensive care: systematic review and meta-analysis of hospital interventions. *J Perinatol.* 2019;39(3):375–386 [PubMed: 30659239]
53. Barrero-Castillero A, Morton SU, Nelson CA III, Smith VC. Psychosocial stress and adversity: effects from the perinatal period to adulthood. *NeoReviews.* 2019;20(12):e686–e696 [PubMed: 31792156]
54. Enlow E, Faherty LJ, Wallace-Keeshen S, Martin AE, Shea JA, Lorch SA. Perspectives of low socioeconomic status mothers of premature infants. *Pediatrics.* 2017;139(3):e20162310 [PubMed: 28223372]
55. Patel AL, Johnson TJ, Meier PP. Racial and socioeconomic disparities in breast milk feedings in US neonatal intensive care units. *Pediatr Res.* 2021;89(2):344–352 [PubMed: 33188286]

56. Thoits PA. Stress and health: major findings and policy implications. *J Health Soc Behav.* 2010;51(suppl):S41–S53 [PubMed: 20943582]
57. Edwards EM, Horbar JD. Following through: interventions to improve long-term outcomes of preterm infants. *Semin Perinatol.* 2021;45(4):151414 [PubMed: 33853737]
58. Roberts DE. *Killing the Black Body: Race, Reproduction, and the Meaning of Liberty.* New York, NY: Vintage Books; 1997
59. Williams DR, Rucker TD. Understanding and addressing racial disparities in health care. *Health Care Financ Rev.* 2000;21(4):75–90 [PubMed: 11481746]
60. First L, Kemper A; American Academy of Pediatrics. Racism and its effects on pediatric health. Available at: <https://www.aappublications.org/cc/racism-and-its-effects-on-pediatric-health> Accessed October 11, 2021
61. Trent M, Dooley DG, Dougé J; Section on Adolescent Health; Council on Community Pediatrics; Committee on Adolescence. The impact of racism on child and adolescent health. *Pediatrics.* 2019;144(2):e20191765 [PubMed: 31358665]
62. Pediatrics on Call Podcast. Available at: <https://services.aap.org/en/pages/podcast/>
63. White-Davis T, Edgoose J, Brown Speights JS, et al. Addressing racism in medical education an interactive training module. *Fam Med.* 2018;50(5):364–368 [PubMed: 29762795]
64. Nieblas-Bedolla E, Christophers B, Nkinsi NT, Schumann PD, Stein E. Changing how race is portrayed in medical education: recommendations from medical students. *Acad Med.* 2020;95(12):1802–1806 [PubMed: 32379145]
65. Stanford University Share: Education Team. Upstander intervention. Available at: <https://sara.stanford.edu/upstanderlife> Accessed October 11, 2021
66. Torres MB, Salles A, Cochran A. Recognizing and reacting to microaggressions in medicine and surgery. *JAMA Surg.* 2019;154(9):868–872 [PubMed: 31290954]
67. Rent S If it's important, teach us: accountability in education on structural racism. *J Perinatol.* 2021;41(3):367–369 [PubMed: 32887928]
68. Ripp K, Braun L. Race/ethnicity in medical education: an analysis of a question bank for Step 1 of the United States Medical Licensing Examination. *Teach Learn Med.* 2017;29(2):115–122 [PubMed: 28051889]
69. Borrell LN, Elhawary JR, Fuentes-Afflick E, et al. Race and genetic ancestry in medicine - a time for reckoning with racism. *N Engl J Med.* 2021;384(5):474–480 doi: 10.1056/NEJMms2029562 [Internet] [PubMed: 33406325]
70. Amutah C, Greenidge K, Mante A, et al. Misrepresenting race: the role of medical schools in propagating physician bias. *N Engl J Med.* 2021;384(9):872–878 [PubMed: 33406326]
71. The American Board of Pediatrics. National events intensify ABP's commitment to diversity, inclusion. 2021. Available at: <https://www.abp.org/news/national-events-intensify-abps-commitment-diversity-inclusion> Accessed October 11, 2021
72. Lee W-C, Veeranki SP, Serag H, Eschbach K, Smith KD. Improving the collection of race, ethnicity, and language data to reduce healthcare disparities: a case study from an academic medical center. *Perspect Health Inf Manag.* 2016;13(Fall):1g
73. Reichman V, Brachio SS, Madu CR, Montoya-Williams D, Peña M-M. Using rising tides to lift all boats: Equity-focused quality improvement as a tool to reduce neonatal health disparities. *Semin Fetal Neonatal Med.* 2021;26(1):101198 [PubMed: 33558160]
74. Vyas DA, Eisenstein LG, Jones DS. Hidden in Plain Sight — Reconsidering the use of race correction in clinical algorithms. *N Engl J Med.* 2020;383(9):874–882 doi: 10.1056/NEJMms2004740 [PubMed: 32853499]
75. Buck Louis GM, Grewal J, Albert PS, et al. Racial/ethnic standards for fetal growth: the NICHD Fetal Growth Studies. *Am J Obstet Gynecol.* 2015;213(4):449.e1–449.e41 [PubMed: 26410205]
76. Braun L, Wentz AE. Rethinking ethnicity, fetal growth and customised charts. *BJOG.* 2018;125(6):710 [PubMed: 28914493]
77. Lion KC, Raphael JL. Partnering health disparities research with quality improvement science in pediatrics. *Pediatrics.* 2015;135(2): 354–361 [PubMed: 25560436]

78. Bingham D, Jones DK, Howell EA. Quality improvement approach to eliminate disparities in perinatal morbidity and mortality. *Obstet Gynecol Clin North Am.* 2019;46(2):227–238 [PubMed: 31056125]
79. Pena M-M, Reichman V How to conduct equity-focused quality improvement in the NICU. Webinar by the American Academy of Pediatrics' Council on Quality Improvement & Patient Safety; July 29, 2021. Slides available upon request
80. Montoya-Williams D, Peña M-M, Fuentes-Afflick E. In pursuit of health equity in pediatrics. *J Pediatr X.* 2020;5:100045 [PubMed: 33733084]
81. Thomas SB, Quinn SC, Butler J, Fryer CS, Garza MA. Toward a fourth generation of disparities research to achieve health equity. *Annu Rev Public Health.* 2011;32:399–416 [PubMed: 21219164]
82. Boyd RW, Lindo EG, Weeks LD, Lomore MR. On racism: a new standard for publishing on racial health inequities. Available at: <https://www.healthaffairs.org/doi/10.1377/hblog20200630.939347/full/> Accessed October 11, 2021
83. Flanagan A, Frey T, Christiansen SL, Bauchner H. The reporting of race and ethnicity in medical and science journals: comments invited. *JAMA.* 2021;325(11):1049–1052 [PubMed: 33616604]
84. American Academy of Pediatrics. Pediatrics author guidelines. Available at: <https://pediatrics.aappublications.org/page/author-guidelines> Accessed October 11, 2021
85. American College of Obstetricians and Gynecologists. Obstetrics & Gynecology Instructions for Authors—January 2021. *Obstet Gynecol.* 2021;137(1):183–200
86. Ayalew B, Dawson-Hahn E, Cholera R, et al. The health of children in immigrant families: key drivers and research gaps through an equity lens. *Acad Pediatr.* 2021;21(5):777–792 [PubMed: 33529739]
87. Ravi D, Iacob A, Profit J. Unequal care: racial/ethnic disparities in neonatal intensive care delivery. *Semin Perinatol.* 2021;45(4):151411 [PubMed: 33902931]
88. O'Brien KR, Scheffer M, van Nes EH, van der Lee R. How to break the cycle of low workforce diversity: a model for change. *PLoS One.* 2015;10(7):e0133208 [PubMed: 26217957]
89. Williams JS, Walker RJ, Egede LE. Achieving equity in an evolving healthcare system: opportunities and challenges. *Am J Med Sci.* 2016;351(1):33–43 [PubMed: 26802756]
90. Jackson CS, Gracia JN. Addressing health and health-care disparities: the role of a diverse workforce and the social determinants of health. *Public Health Rep.* 2014;129(Suppl 2):57–61 [PubMed: 24385666]
91. Cohen JJ, Gabriel BA, Terrell C. The case for diversity in the health care workforce. *Health Aff (Millwood).* 2002;21(5):90–102 [PubMed: 12224912]
92. Acholonu RG, Oyeku SO. Addressing microaggressions in the health care workforce—a path toward achieving equity and inclusion. *JAMA Netw Open.* 2020;3(11):e2021770 [PubMed: 33226427]
93. Williamson T, Goodwin CR, Ubel PA. Minority tax reform — avoiding overtaxing minorities when we need them most. *N Engl J Med.* 2021;384(20):1877–1879 doi: 10.1056/NEJMp2100179 [PubMed: 34014047]
94. Horowitz E, Samnaliev M, Savich R. Seeking racial and ethnic equity among neonatologists. *J Perinatol.* 2021;41(3):422–434 [PubMed: 33495537]
95. Accreditation Council for Graduate Medical Education. Data resource book: academic year 2019–2020. 2020. Available at: <https://www.acgme.org/about-us/publications-and-resources/graduate-medical-education-data-resource-book/> Accessed October 11, 2021
96. Montez K, Omoruyi EA, McNeal-Trice K, et al. Trends in race/ethnicity of pediatric residents and fellows: 2007–2019. *Pediatrics.* 2021;148(1):e2020026666 10.1542/peds.2020-026666 [Internet] [PubMed: 34131043]
97. Carr RM, Lane-Fall MB, South E, et al. Academic careers and the COVID-19 pandemic: Reversing the tide. *Sci Transl Med.* 2021;13(584):eabe7189 [PubMed: 33692133]
98. Cardel MI, Dhurandhar E, Yarar-Fisher C, et al. Turning chutes into ladders for women faculty: a review and roadmap for equity in academia. *J Womens Health (Larchmt).* 2020;29(5):721–733 [PubMed: 32043918]
99. Merchant RM, South EC, Lurie N. Public health messaging in an era of social media. *JAMA.* 2021;325(3):223–224 [PubMed: 33393964]

100. Hassen N, Lofters A, Michael S, Mall A, Pinto AD, Rackal J. Implementing anti-racism interventions in healthcare settings: a scoping review. *Int J Environ Res Public Health*. 2021;18(6):2993 doi: 10.3390/ijerph18062993 [PubMed: 33803942]
101. Quinn M, Menon U. NICU parent preferences for stakeholder engagement in research. *Adv Neonatal Care*. 2020;20(5):406–414 [PubMed: 32868591]
102. Nguyen OK, Kruger J, Greysen SR, Lyndon A, Goldman LE. Understanding how to improve collaboration between hospitals and primary care in postdischarge care transitions: a qualitative study of primary care leaders' perspectives. *J Hosp Med*. 2014;9(11):700–706 [PubMed: 25211608]
103. Foronda C, Baptiste D-L, Reinholdt MM, Ousman K. Cultural humility: a concept analysis. *J Transcult Nurs*. 2016;27(3):210–217 [PubMed: 26122618]



Figure 1. Sectors of neonatal-perinatal medicine and health care through which care providers can contribute to antiracism.

Self-Reported Race/Ethnicity of Neonatal-Perinatal Fellows vs. Pediatric Residents, 2019-2020

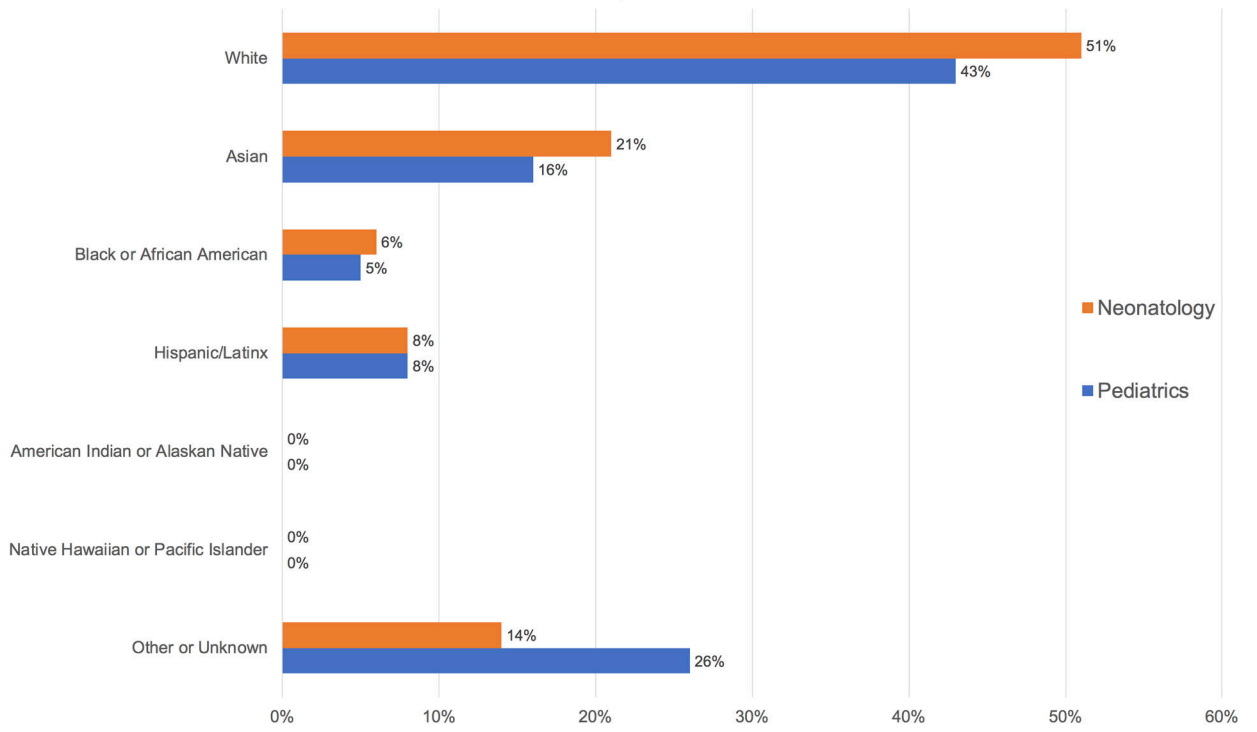


Figure 2. Self-reported race/ethnicity of active neonatal-perinatal medicine fellows and pediatric residents in the United States in the 2019–2020 academic year.

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STRATEGIES TO TACKLE RACISM AT EVERY LEVEL

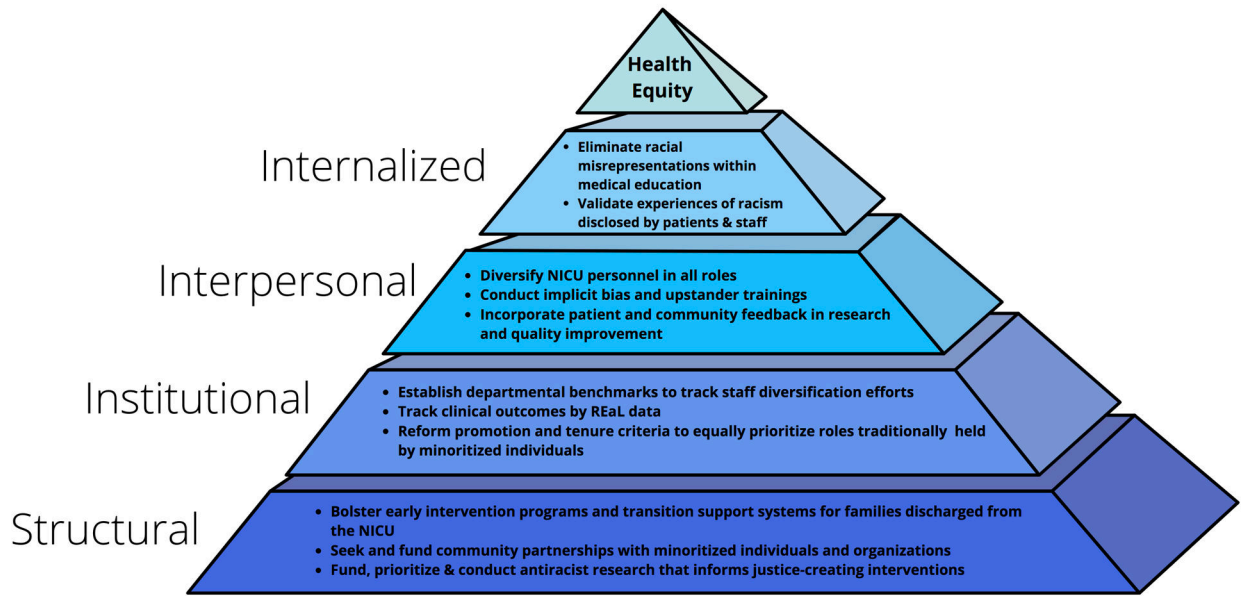


Figure 3. Strategies neonatal clinicians can undertake to tackle each level of racism within neonatology.

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