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Advanced Imaging Digest

Health Disparities in Advanced Imaging

Inequity and bias based on race and ethnicity systematically exist within the United States, impacting everything from community safety to healthcare access. A 2003 review of the subject and accompanying commentaries in the New England Journal of Medicine focused on racial classification in medicine and biomedical research. A follow-up article to this study, "Hidden in Plain Sight—Reconsidering the Use of Race Correction in Clinical Algorithms," focused more specifically on using race correction in stratification of disease risk. The article concluded this type of algorithm propagates, rather than diminishes, race-based medicine, which the American Academy of Family Physicians (AAFP) opposes.

During this same period, focus on health disparity and inequity as a concept for scientific study grew, shifting the focus from race-based medicine to the achievement of health equity. Now, the concept of inequity and bias in medicine extend beyond race and ethnicity and include gender, sexual orientation and disability. Most recently, scientific approaches to the study of racial and health inequity have highlighted the potential of using artificial intelligence to study clinical data sets and apply risk stratification (including race), which can lead to biased results.

Racial disparities in pediatric emergency care

In a retrospective, case-cohort study that examined laboratory and radiological testing among patients discharged from two urban pediatric emergency departments (ED) between March 2, 2009 and March 31, 2010, there were 75,254 visits among 49,164 unique patients. Of these, 31.0% had laboratory and 30.5% had radiological testing. African American (adjusted odds ratio (aOR), 0.93; confidence interval (CI), 0.89-0.98; P = 0.004) and biracial racial categories (aOR, 0.91; CI, 0.86-0.98; P = 0.007) were associated with decreased odds of laboratory testing compared with non-Hispanic whites. Similarly, Native American (aOR, 0.82; CI, 0.73-0.94), African American (aOR, 0.81; CI, 0.72-0.81), biracial (aOR, 0.82; CI, 0.77-0.88), Hispanic (aOR, 76; CI, 0.72-0.81), and other (aOR, 0.84; CI, 0.73-0.97) racial categories were each associated with lower odds of radiological testing compared with non-Hispanic whites.

Magellan Healthcare clinical leaders continually review imaging trends and needs in light of current medical concerns, available literature, and society and Centers for Disease Control and Prevention recommendations and guidelines. This document is a summary of our latest findings. Please consult references for detailed information.

Subgroup analysis of visits with a final diagnosis of fever and upper respiratory tract infection, conditions for which there were few treatment protocols, confirmed the racial differences. Subgroup analysis in visits for head injury, for which there is an established evaluation protocol, did not find a lower odd of laboratory or radiological testing by race compared with non-Hispanic whites, suggesting that evaluation algorithms can ameliorate racial disparities in pediatric ED care.

Health equity and disparity

Health equity is defined as valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and healthcare disparities. Health disparity is the adverse effects experienced by groups of people who have been systematically subjected to greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.

According to a recent Kaiser Family Foundation report, health and healthcare disparities refer to differences in health and healthcare between groups that are closely linked with social, economic, and/or environmental disadvantage. Disparities occur across many dimensions, including race and ethnicity, socioeconomic status, age, location, gender, disability status and sexual orientation.

Assessing and solving health and healthcare disparities in advanced imaging

Racial equity tools help clearly define terminology related to health and healthcare disparities, enabling consistency in studying the problem and achievement of better solutions.

Term	Background/Definition
Ethnicity	A social construct that divides people into smaller social groups based on characteristics such as shared sense of group membership, values, behavioral patterns, language, political and economic interests, history and ancestral geographical base. Examples of different ethnic groups include: • Cape Verdean, Haitian, African American (Black) • Chinese, Korean, Vietnamese (Asian) • Cherokee, Mohawk, Navaho (Native American) • Cuban, Mexican, Puerto Rican (Latinx) • Polish, Irish, Swedish (White)
Race	Racial categorization was invented by scientists to support world views that some groups of people were superior and some inferior. There are three important concepts linked to this: 1. Race is a made-up social construct, not an actual biological fact. 2. Race designations have changed over time. Some groups that are considered “White” in the United States today were considered “Nonwhite” in previous eras in U.S. census data, and in mass media and popular culture (e.g., Irish, Italian and Jewish people). 3. The way in which racial categorizations are enforced has also changed over time. For example, the racial designation of Asian American and Pacific Islander changed four times in the 19th century. At times, these groups were defined as white and at other times as nonwhite and used by whites as designated groups at different times in history to compete with African American labor.

Implicit Bias	Also known as unconscious or hidden bias, implicit biases are negative associations that people unknowingly hold. They are expressed automatically without conscious awareness. Many studies have indicated implicit biases affect individuals' attitudes and actions, creating real-world implications even though individuals may not be aware that those biases exist within themselves. Notably, implicit biases have been shown to trump individuals' stated commitments to equality and fairness, producing behavior that diverges from the explicit attitudes many people profess. The Implicit Association Test is often used to measure implicit biases regarding race, gender, sexual orientation, age, religion and other topics.
Health Inequity/Health Disparity	Health inequity, or health disparity, is a specific type of health inequality that denotes an unjust difference in health. By one common definition, when health differences are preventable and unnecessary, allowing them to persist is unjust. In this sense, health inequities are systematic differences in health that could be avoided by reasonable means. In general, social group differences in health, such as those based on race or religion, are considered health inequities because they reflect an unfair distribution of health risks and resources. The key distinction between the inequality and inequity is the former is simply a dimensional description employed whenever quantities are unequal, while the latter requires passing a moral judgment that the inequality is wrong.

Conclusion

Magellan Healthcare has taken a proactive stance in addressing racial and healthcare inequities, assembling a team of clinicians to standardize definitions, methods and organizing approaches and develop science-based methods to continuously identify, track and address potential bias, disparity and inequity in our policies and procedures, guidelines, tools and day-to-day operations. As the focus on health and healthcare disparity and inequity, and research in this area continue to evolve, we will continue to integrate findings into efforts across our organization, updating and writing policies and procedures that will ensure success in eliminating disparities now and in the future.

About the author

M. Atif Khalid, M.D., senior medical director, Magellan Healthcare

Dr. Khalid joined Magellan in 2014. As a board-certified diagnostic radiologist with a career spanning more than twenty years, he has a thorough understanding of the complexities of the U.S. healthcare system and current standards of care. In his current role, Dr. Khalid is involved in training new physicians, auditing, continuing education and policy development.

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