

Variation in Antimicrobial Prescribing for Otitis Media by Race: Different Wrinkle in Disparity?

Acute otitis media (AOM) is an almost universal occurrence during childhood, with at least 90% experiencing ≥ 1 episode by age 7 years.¹ Multiple studies through the early 2000s noted a lower frequency of AOM among black children compared with white children.^{2,3} Other studies suggested that rates of middle ear effusion^{4,5} and clinical diagnoses of AOM³ did not differ between black and white children. The apparent rate difference in many studies more likely reflected differences in access to care and possibly differences in diagnosis and management by health care providers, rather than differences in genetic predisposition. In a recent study in the Philadelphia area, primary care physicians were less likely to diagnose AOM in black children versus non-black children; they were more likely, however, to prescribe recommended narrow-spectrum amoxicillin than broader-spectrum antimicrobial agents when they diagnosed AOM in black children versus non-black children.⁶

In this issue of *Pediatrics*, Fleming-Dutra et al⁷ present their results on this topic from analyses of the National Ambulatory Care Survey and National Hospital Ambulatory Care Survey databases from 2008–2010. AOM diagnoses in these databases were assigned by the treating physician, although not necessarily confirmed with the level of rigor required of a prospective clinical trial. The sample size (4178 visits) and national representation nonetheless lend credence to the validity of the core findings. The rate of visits with a diagnosis of otitis media (presumptively AOM) per 1000 population did not differ between non-black and black children <5 years old (662 vs 560; $P = .25$). There was a modest difference among children aged 5 to 14 years, with black children having a lower rate (89 vs 143 per 1000 population; $P = .03$). More importantly, black children were less likely to be prescribed a broad-spectrum antimicrobial agent than non-black children (odds ratio: 0.59 [95% confidence interval: 0.40–0.86]) after adjustment for age, gender, type of health insurance, clinical setting, region of country, and other factors.

Another interpretation of these data are that black children were 69% more likely to be prescribed narrow-spectrum therapy, seemingly in accordance with the American Academy of Pediatrics clinical practice guideline in effect during the study period.⁸ At face value, this could indicate a “reversal” in direction of the health care disparity usually identified in the United States. A similar finding has been observed among adults with acute respiratory tract infections.⁹ Fleming-Dutra et al⁷ found no differences in care-seeking by black children versus non-black children for upper respiratory tract conditions, suggesting that the difference in prescribing for AOM was not due to differences in care-seeking behaviors among the families of black and non-black children.

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acute otitis media, antimicrobial prescribing, racism

ABBREVIATION

AOM—acute otitis media

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So, why is there such a difference?

- Is it because practitioners who provide care predominantly for minority populations (or at least black versus non-black) are more adherent to AOM treatment recommendations?
- Is it because providers in general are more adherent to such recommendations when treating minority children, or less adherent when treating majority population children, for the same diagnosis?
- Is it just overprescribing in the majority (non-black) population?⁶ Physician perceptions about parent expectations can influence inappropriate antimicrobial prescribing,¹⁰ and parent expectations regarding antimicrobial therapy can vary by race/ethnicity.¹¹
- Is there a differential exposure to pharmaceutical detailing¹² among practitioners who treat predominantly majority (more affluent) versus minority (less affluent) pediatric populations?
- Do providers caring for minority populations tend to prescribe cheaper therapies due to greater focus on reducing costs to the patient/family or their health care system?
- Could components of structural racism contribute to this variation in clinical decision-making?

Structural racism is defined as the “normalization and legitimization of an array of dynamics (historical, cultural, institutional, and interpersonal) that routinely advantage whites” (or any majority group) “while producing cumulative and chronic adverse outcomes for people of color” (or any minority group).¹³ Recognizing that racism may be institutional or personally mediated can lead to better understanding of race-associated differences in health outcomes.¹⁴ Institutional or systemic racism in health care can be thought of as the differential availability of material resources such as health care access, including variations in insurance type and benefits, and inadequate capacity of health care systems to meet the needs of patients with low health literacy or to foster cross-cultural trust between majority providers and minority patients.¹⁵ Personally mediated racism embodies differential assumptions about abilities and motives of others based on their race. This racism may be intentional or unintentional and includes acts of commission or omission.¹⁴ We as physicians may enter the patient–provider relationship with our own set of biases, stereotypes, and expectations. We may subconsciously use the strategy of socialization to put people into categories (ie, race) to use cognitive shortcuts that have been previously created in decision-

making. We develop our own perceptions of what our patients and their families may want or need and form images related to their understanding of medical information and whether a particular family can participate in a shared-decision model. These shortcuts in imagery may act as facilitators or could have the opposite effect for minority populations, resulting in disparities of care.¹⁶

What is the true basis for the observed “reverse” guideline-adherent disparity reported by Fleming-Dutra et al?⁷ We hope it is due at least in part to conscious application of guideline recommendations among the practitioners caring for black children. We suspect it is partially due to perceptions of parent expectations or other influences on overprescribing of broad-spectrum antimicrobial agents for non-black children. There is still work to be done educating parents and practitioners about the need for judicious use of antimicrobial agents. We wonder whether aspects of racism played roles in producing these results. Regardless, these data provide an opportunity for all of us to reflect upon the beliefs and practices regarding race/ethnicity that may consciously or unconsciously influence clinical decision-making within ourselves and the institutional cultures in which we practice.

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