Most residents and fellows are aware that individuals of certain races and ethnicities have a higher risk of developing primary open-angle glaucoma (POAG), but many may not appreciate the scale of this disparity. Black and Latino individuals are not only three to eight times more likely to be diagnosed with POAG, but they are also younger and have more severe disease at the time of diagnosis. Furthermore, they are six to 15 times more likely to go blind from glaucoma.¹⁻⁴

**DO GENETIC FACTORS ALONE ACCOUNT FOR THIS DISPARITY?**

Understanding the complex interplay of race, ethnicity, and medicine requires an understanding of the social determinants of health. These are defined by the World Health Organization as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and system shaping the conditions of daily life.” This means that factors such as education, health care, neighborhood and environment, social class and community, and financial stability play major roles in health outcomes. This has been observed across all medical specialties, with numerous studies even showing that patients of higher income classes or higher education live longer.⁵⁻⁶

Importantly, discrimination and racism interact closely with and influence each of these factors. Systemic racism describes a system that unequally distributes access to resources, power, and privilege based on race. Unfortunately, ophthalmology is not immune to these systemic inequalities.

**DISPARITIES IN GLAUCOMA**

Many studies of health disparities in glaucoma have been published. This article highlights two recent investigations.

A study published in *Ophthalmology* in 2017 evaluated insurance claims data for more than 20,000 patients diagnosed with glaucoma between 2007 and 2011.⁷ The findings showed that patients with Medicaid received significantly less glaucoma testing, including visual field evaluation, OCT imaging, and fundus photography, compared to patients with commercial insurance. Almost 50% of Medicaid patients diagnosed with open-angle glaucoma underwent no testing at all compared to 20% of those with commercial insurance. When stratified by race, the disparities were even more dramatic: Black patients with Medicaid were less likely to receive any glaucoma testing, and Black patients with commercial insurance were less likely to receive glaucoma testing than White patients with commercial insurance. OCT retinal nerve fiber layer analysis and visual field testing are invaluable to—and often required for—the accurate diagnosis and staging of glaucoma and detection of glaucomatous progression. The study’s authors concluded that the findings call into question the quality of glaucoma care received by Medicaid patients and Black patients overall.

A study published in *Ophthalmology* in 2022 evaluated the difference in eye care utilization among patients who had glaucoma by race and socioeconomic status with a 5% representative sample of all Medicare beneficiaries aged 65 years or older.⁸ The investigators found that Black and Hispanic patients were less likely than White patients to have outpatient glaucoma follow-up and testing, but they were more likely to undergo a procedure such as selective laser trabeculoplasty or glaucoma surgery. This association persisted even after adjusting for socioeconomic status. The investigators hypothesized that Black patients received less glaucoma monitoring and had more severe or progressive disease than White patients, resulting in a higher likelihood of needing to undergo a laser or surgical procedure.

**WHY DO THESE DISPARITIES EXIST?**

Numerous factors play a role in these disparities, and they stem from patients, physicians, and systemic issues.

**Patient Factors**

Medicare recipients and minority patients:

- May not be able to afford a copay or deductible and/or may refuse testing or follow-up owing to financial concerns;
- May distrust the health care system, as 56% of older Black Americans...
cited a lack of trust in their eye care provider as a barrier to care⁸; • May possess insufficient health literacy to understand the importance of testing and follow-up; and/or • May have limited availability to follow up due to difficulties securing reliable transportation or child care, inflexible work schedules, etc.¹⁰

Physician Factors
Additionally, physicians:
• May possess implicit biases that inadvertently affect their delivery of care to patients of different racial, ethnic, or socioeconomic backgrounds¹¹ and/or • May be less likely to order testing on patients with Medicaid due to lower financial reimbursement, as Medicaid reimburses less than Medicare and, on average, much less than private insurance.

Systemic Factors
Overall systemic issues:
• May increase patient wait times, as a limited number of physicians accept Medicaid compared with those who accept commercial insurance¹² and/or • May limit coverage of routine care, as Medicaid, on average, covers fewer routine eye examinations than commercial insurance providers. (As of 2016, only nine states have covered routine annual eye examinations for Medicaid patients,¹³ whereas many major commercial insurance payors provide this coverage.)

HOW CAN ACCESS TO CARE BE IMPROVED?
Better access to care requires focusing on several objectives, including (1) minimizing barriers to care, (2) increasing research that includes minority patients, and (3) providing patient-centered care.

1. Minimizing Barriers to Care
Some steps to minimize barriers to care include the following.
• Establish a community-based eye care team that includes social workers and community health workers who may be able to connect patients with additional resources to improve their care.
• Increase nontraditional methods of reaching patients who are at high risk of being lost to follow-up. For example, develop mobile eye care teams equipped with glaucoma testing equipment that can travel to churches or community centers in low-resource communities.
• Improve diversity in the workforce. Studies have shown that physician-patient racial concordance improves patient outcomes,¹⁴-¹⁶ and ophthalmology is one of the least diverse specialties in medicine.¹⁷ Even recruiting and retaining minority nonphysician staff members can help improve patient outcomes.
• Increase eye care education on a systemic level to improve eye health literacy and ultimately improve patient retention.
• Advocate to expand insurance coverage and access to health care in the United States.

2. Increasing Research Including Minority Patients
Many research efforts in glaucoma focus primarily on White patients. Even the reference database of one of the most common OCT platforms used today (Spectralis, Heidelberg Engineering) is based on patients of European descent and should be used only for Caucasian eyes.

Figure. A diagnostic imaging report from the Spectralis (Heidelberg Engineering) states that the reference database is based on patients of European descent and should be used only for Caucasian eyes.
European descent and should be used for “Caucasian eyes only” (Figure).

Racial and ethnic minorities have been shown to have lower rates of participation in POAG clinical trials compared with White patients, despite having a higher disease burden. Increasing research that includes racial and ethnic minorities can not only improve the understanding of differences in glaucomatous progression and management but also slowly increase underrepresented groups’ trust in the medical system.

3. Providing Patient-Centered Care

In order to provide truly equitable care, it is imperative to meet patients where they are. Providers must train themselves and their staff to deliver culturally competent care. This will be different for every patient but may include efforts such as providing interpreter services, including family members in patient care, and improving accessibility in clinics.

Physicians should also practice shared decision-making. Racial and ethnic minorities have reported less participation in their medical decisions and lower levels of satisfaction with their care. Patients may be more likely to adhere to a treatment regimen if they feel they took part in managing their own care.

It is also imperative that providers practice good communication skills. Even when physician-patient racial and ethnic concordance is not achieved, patients report higher levels of satisfaction when physicians show respect for them, listen to their concerns, and display effective communication skills. This is something simple that each of physicians can achieve, no matter their location or stage of training. Additionally, practitioners must recognize their own implicit biases and how they may affect the way they deliver care.

CONCLUSION

Physicians have a duty to use their privilege to fight consistently for equity in health care. They must do what they can to understand their own biases, educate themselves and their community about existing health disparities, and work to minimize barriers and improve access to care.


KATHERINE PETERS, MD
• Anterior segment fellow, Vance Thompson Vision, Sioux Falls, South Dakota
• katherine.s.peters@gmail.com
• Financial disclosure: None