

Ensuring All Cancer Patients Can Benefit From Genetic Testing

Researchers highlight ways to improve equitable implementation and discovery of pharmacogenomic testing in cancer care.

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A new paper released February 22, 2024, in the [Journal of Clinical Oncology](#) finds that while incorporating pharmacogenomic (PGx) testing into cancer care can help improve patient outcomes, barriers to PGx testing, discovery and implementation are impacting its adoption and creating disparities that impact diverse populations.

A component of precision medicine, PGx testing examines how variations in a patient's inherited genes may impact how they respond to drugs. PGx testing can lead to better clinical outcomes for people with cancer by improving the effectiveness of treatment or by reducing the risk of adverse drug reactions that can cause a patient to stop treatment, or in some cases, can result in death. Yet, the paper's authors note that adoption of PGx testing into oncology care remains scarce, with devastating impact. Approximately 60% of patients with advanced cancer have been reported to be taking medications with known PGx interactions, and approximately 1,300 people die each year from the administration of a common chemotherapy drug for which a PGx test is available.

"Incorporating PGx testing into oncology is critical to making sure that people with cancer receive the right treatment at the right dosage based on their individual genetic makeup," said Sharon P. Shriver, PhD, Project Manager, Science Policy, for the American Cancer Society Cancer Action Network (ACS CAN) and lead author. "Unfortunately, the lack of PGx testing necessary to safely adjust the dosing of oncology drugs has resulted in lives lost."

The paper's authors examined how current scientific understanding of the role of PGx in cancer care may be biased toward a greater understanding and more complete implementation of PGx for individuals of European descent compared to other genetic ancestry groups. This bias results from the fact that clinical trial participants and large genomic databases generally do not reflect the racial and ethnic diversity of the U.S. population or of cancer patients. This bias further has implications for several identified barriers preventing adoption of PGx testing in cancer care and ensuring all populations can benefit from it, including ambiguity and inconsistency in drug labeling; lack of infrastructure such as clinical decision support systems; insufficient provider and patient education; and inadequate insurance coverage of PGx testing and follow-up.

The paper highlights nine consensus [recommendations](#) ACS CAN released in June 2023 to promote more equitable PGx discovery and implementation for cancer patients. The recommendations, which address barriers in PGx discovery, policy, and application, were created by a working group of stakeholders which included researchers, policymakers, industry representatives, and patient advocates.

“No one should be disadvantaged in their cancer journey,” said Mark E. Fleury, PhD, Principal, Policy Development - Emerging Science for ACS CAN and paper co-author. “When genetic ancestry is not considered or mischaracterized in PGx discovery and application, it can contribute to disparities in outcomes across racial and ethnic categories. The recommendations offered will help address barriers to facilitate equitable PGx discovery and application in cancer care so that all populations can benefit from them.”

ACS CAN is working to improve access to PGx testing through its state advocacy work to expand insurance coverage of comprehensive biomarker testing, which includes PGx testing. Biomarker testing is a critical step toward accessing precision medicine, including targeted therapies; however, not all patients who could benefit have access to the testing that can identify the best treatment for their condition. To date, 14 states have passed biomarker coverage legislation, which will help reduce disparities in access.

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