



Understanding the Importance of **Oncology Biomarker Testing**

What is oncology biomarker testing?

Oncology biomarker testing (also known as mutation, genomic, or molecular testing) uses laboratory tests, including companion diagnostics, to help health care teams gather as much information as possible about a patient's cancer, ideally before treatment begins, and uncover whether the patient has an actionable biomarker.¹ A companion diagnostic (CDx) is typically an in vitro diagnostic that detects a predictive biomarker to determine whether the patient will respond to a specific treatment.²

As of 2020, there are:

44

FDA-approved companion diagnostic tests on the market³

253

FDA-approved oncology drugs with biomarker indications⁴

Did you know?

Most health systems say they do a good job of biomarker testing, specifically in non-small cell lung cancer (NSCLC), but there is a lot of room for improvement:

55%

Of patients with advanced NSCLC and targetable mutations in one study did not receive targeted therapy⁵

21%

Of North American-based oncologists treating metastatic NSCLC made treatment decisions before the patient's genetic mutation results were available⁶

Benefits of oncology biomarker testing



Health systems

Advisory Board's research has found that oncology biomarker testing aligns with many health systems' broad, strategic goals. In the future, health systems will increasingly use oncology biomarker testing to help deliver personalized care to patients and advance precision medicine initiatives.

Biomarker testing can also help organizations drive toward value-based care by improving the overall value of care across the entire patient journey—from diagnosis to treatment selection and outcomes.

Additionally, organizations can use biomarker testing to elevate their oncology department. Advisory Board found that best-in-class organizations utilize biomarker testing to help improve outcomes and strengthen the quality of the oncology care they provide.⁷

References: **1.** "Biomarker Testing," LUNGEvity, [https://lungevity.org/for-patients-caregivers/lung-cancer-101/diagnosing-lung-cancer/biomarker-testing#:~:text=Biomarker%20testing%20\(also%20known%20as,PD%20L1%20protein%20expression%20level](https://lungevity.org/for-patients-caregivers/lung-cancer-101/diagnosing-lung-cancer/biomarker-testing#:~:text=Biomarker%20testing%20(also%20known%20as,PD%20L1%20protein%20expression%20level.). **2.** "Companion Diagnostics," US Food and Drug Administration. **3.** Jan Trøst Jørgensen, "The current landscape of the FDA approved companion diagnostics," *Translational Oncology*, Volume 14, Issue 6, 2021, 101063. **4.** "Table of Pharmacogenomic Biomarkers in Drug Labeling," FDA, December 2020, <https://www.fda.gov/media/124784/download>. **5.** Gierman H, et al., "Genomic testing and treatment landscape in patients with advanced non-small cell lung cancer (aNSCLC) using real-world data from community oncology practices," *Journal of Clinical Oncology*, 2019, doi:10.1200/JCO.2019.37.15_suppl.1585. **6.** Mason C, et al., "Patterns of Biomarker Testing Rates and Appropriate Use of Targeted Therapy in the First-Line, Metastatic Non-Small Cell Lung Cancer Treatment Setting," *Journal of Clinical Pathways*, 2018, doi:10.25270/jcp.2018.02.00001. **7.** Data on File, US-57118, AstraZeneca Pharmaceuticals LP.



Providers

Providers can use oncology biomarker testing to help make more informed care and treatment decisions based on a patient's genetic makeup.

Notably, biomarker testing can help providers get patients on the right treatment, at the right time. In fact, 37.6% of cancer patients in one study of 5954 patients with refractory malignancies had therapeutically actionable genetic alterations, meaning they could be matched to existing drugs, across many different cancer types.⁸ Providers can also use biomarker testing to indicate a patient's increased risk or susceptibility to a given disease, predict the natural history of disease without further intervention, or predict an outcome following an intervention.⁹



Patients

Oncology biomarker testing may help improve patients' treatment success and outcomes. It also allows patients to avoid trial-and-error and more quickly receive the appropriate treatments for their genetic makeup.

Your role in advancing biomarker testing

Recommendations from Advisory Board's research

01

Assess how biomarker testing supports your strategic priorities

Consider how biomarker testing can support your broader organizational goals—whether delivering high-value and appropriate care, advancing precision medicine, or others.

02

Connect with your VP or service line leader to gauge current performance

Evaluate your organization's current biomarker testing program and processes. Discuss what works well and identify any challenges or barriers when it comes to biomarker testing. Use these discussions to recognize opportunities to standardize biomarker testing across your broader organization.

03

Invest in necessary infrastructure to improve process and long-term results

Leverage any internal resources (e.g., staff, EHR enhancements) to improve your biomarker testing process. Prioritize among long-lasting, sustainable investments to improve your biomarker testing process.

References: 8. Flaherty K, et al., "Molecular Landscape and Actionable Alterations in a Genomically Guided Cancer Clinical Trial: National Cancer Institute Molecular Analysis for Therapy Choice (NCI-MATCH)," *Journal of Clinical Oncology*, doi: 10.1200/JCO.19.03010, 2020. 9. "Types of Biomarkers," Personalized Medicine Coalition.

About this research

The research in this document is based on Advisory Board's original research and analysis of literature and primary research interviews with health care executives, clinicians, and stakeholders in the biomarker testing process. It does not reflect the opinions or suggestions of AstraZeneca.

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