Clinical Process Gaps Result in Lung Cancer Patients Missing the Opportunity to Benefit from Personalized Medicine, New Study Shows

Published: October 31, 2022

Background

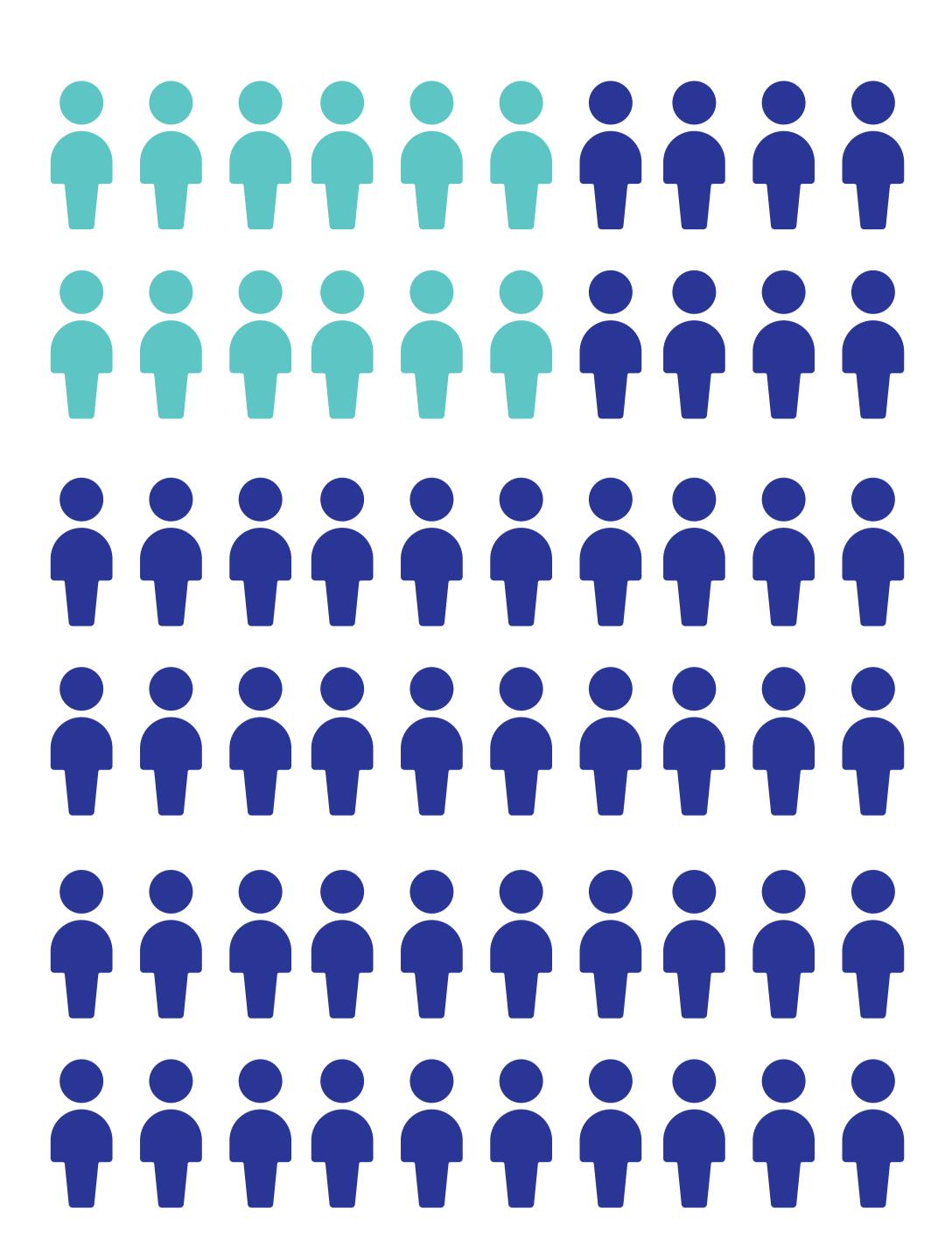
It is well recognized that many oncology patients who should receive personalized treatments do not. A new study published in JCO: Precision Oncology entitled "Impact of Clinical Practice Gaps on the Implementation of Personalized Medicine in Advanced Non-Small Cell Lung Cancer" examines the inconsistent usage of targeted therapies for patients with advanced non-small cell lung cancer (aNSCLC).

The study explores seven specific clinical practice steps in the patient diagnostic and treatment journey and quantifies the patient attrition at each step using de-identified Medicare claims and laboratory data from over 38,000 patients diagnosed with aNSCLC in 2019. The practice gaps assessed in the study include those related to testing access and availability, sample processing, test performance, test interpretation, and utilization of results.

Topline Findings: Despite a lengthy history of targeted treatment availability in aNSCLC, the study found that 644 of every 1,000 newly diagnosed aNSCLC patients (64.4%) did not receive a personalized treatment.

Among patients who are potentially eligible for targeted therapy, 49.7% are lost to factors associated with biomarker testing.

Among those who did receive results from a biomarker test, 29.2% of eligible patients were not prescribed the appropriate targeted therapy.



Step by Step Findings

The data was normalized to a patient population of 1,000 to easily demonstrate the number of eligible patients that may be lost to receiving targeted therapies due to each clinical practice gap.

Biospecimen Collection: Biospecimen collection challenges including insufficient tissue or tumor cell content of initial biopsy or re-biopsy inhibited biomarker testing and its accuracy 14.5% of the studied cases (136 out of 934

patients for whom biopsy was attempted)

testing was not ordered, or treatment began before testing was ordered In 18.1% of the studied cases (142 out of

Biomarker Test Ordering: Appropriate

784 patients whose biopsies had enough tissue or blood to test)

turnaround time delays, treatment was initiated without consideration of test results 4.0% of the studied cases (21 out of

Test Result Reporting: As a result of

524 patients who received conclusive testing results)

Biopsy Referral: Initial solid or blood biopsy was never performed **Biospecimen Evaluation/Pathology:** 18.3% of the studied cases (118 out of 642 **Treatment Decision: Targeted treatment was**

6.6% of cases studied (66 out of 1,000 patients diagnosed with aNSCLC)

Biospecimen tumor cell content was overestimated, inhibiting biomarker testing and its accuracy 1.7% of the studied cases (14 out of 798

successfully biopsied patients)

Biomarker Testing Performance: Biomarker testing provided inconclusive or false-negative (FN) results, usually for technical reasons or because of known testing limitations

patients who received the necessary testing)

not selected despite positive test results 29.2% of the studied cases (147 out of 503

patients who tested positive for an actionable biomarker)



- This study provides health system administrators, policymakers, and the pathology and oncology communities with needed data to target steps in the process where patients are losing the chance for
- targeted therapy The insights from this study can inform efforts to optimize biomarker testing in clinical practice and
- Potential areas for focus and strategies for reducing clinical practice gaps and improving personalized medicine implementation include:

therefore help drive the delivery of personalized medicine to all cancer patients

treatments underpinning personalized medicine

- Developing best practices to ensure tumor sampling, handling and testing is efficient
 - Improving practice integration and cross stakeholder communication including
 - laboratories as a key function Ensuring clear and timely reporting of test results
 - Improving clinician awareness of testing and interpretation of results

Addressing coverage, reimbursement and affordability challenges for tests and