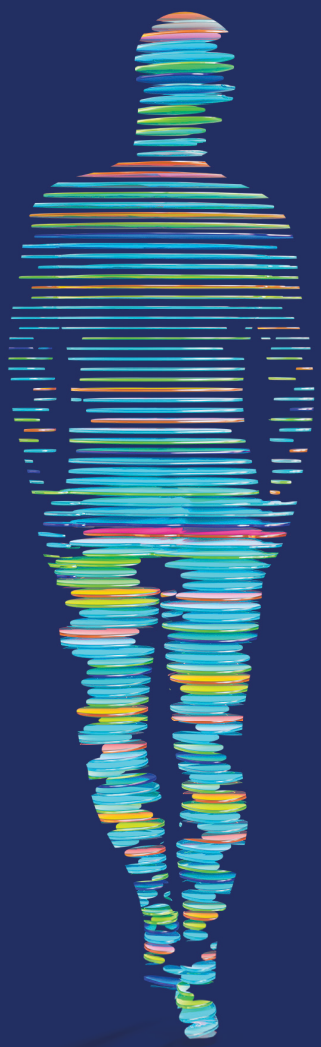
Clinical Practice Gaps Affecting Precision Oncology

Example for NSCLC



Precision Medicine

Precision Medicine

Precision oncology uses molecular biomarkers to aid in the **diagnosis, prognosis, or treatment of cancer.**[1]

Currently, there are **10 driver alterations** which have an associated FDA-approved therapy in aNSCLC[1,2]

Due to this, **broad molecular profiling** is recommended to detect **actionable biomarkers** in eligible patients[3-5]

However, challenges at various steps during the **diagnostic journey** can lead to missed opportunities for patients with aNSCLC to be treated with **biomarker-driven therapies**[6,*]

THE IMPACT OF CLINICAL PRACTICE GAPS ON THE NUMBER OF PATIENTS WITH aNSCLC LOST THROUGHOUT THE DIAGNOSTIC JOURNEY[6,†]

In a retrospective study comprising 38,068 patients with actively managed aNSCLC, potential practice gaps were identified along the entire diagnostic journey. The data below are **normalized to a patient population of 1000** to calculate the number of potentially eligible patients who **may be lost due to these practice gaps**

65% of patients eligible for a biomarker-driven therapy didn't receive it[6*]

Presentation → **Biopsy** → **Processing** → **Ordering** → **Testing** → **Reports & Treatment Decisions**

216 patients were lost because of biopsy issues

21.6% (216 out of 1000 patients) of patients at this step in the diagnostic journey were lost

Patients could be lost due to some of the following biopsy issue barriers:

- Not having a biopsy performed
- Insufficient tissue collected from initial biopsy or from rebiopsy if required
- Overestimation of tumor cell content

142 patients were lost because of ordering issues

18.1% (142 out of 784 patients) of patients who reach this step in the diagnostic journey were lost

Tests were not ordered for patients due to some of the following reasons:

- Cost concerns
- Test accessibility
- Lack of awareness of current guideline recommendations for biomarker testing
- Low confidence in test value
- Early initiation of treatment before biomarker tests were ordered

139 patients were lost because of testing issues

21.7% (139 out of 642 patients) of patients who reach this step in the diagnostic journey were lost

Patients could be lost due to some of the following testing barriers:

- Technical failures resulting in the test not being performed
- Insufficient sample quantity/quality that was missed during processing
- False-negative results
- Laboratory TAT delays

147 patients were lost prior to receiving biomarker-driven therapies*

29.2% (147 out of 503 patients) of patients who reach this step in the diagnostic journey were lost

Biomarker-driven therapies were not received due to some of the following reasons:

- Reporting issues
- Lack of FDA-approved indications
- Lack of awareness of targeted treatment options and/or guidance
- Social determinants of health access/ disparities
- Therapy cost/insurance coverage concerns
- Comorbidities/contraindications
- Transferred to hospice care or death before treatment initiation

Only 356 out of 1000 normalized patients received a biomarker-driven therapy[6*]

aNSCLC, advanced non-small cell lung cancer; FDA, US Food and Drug Administration; NSCLC, non-small cell lung cancer; TAT, turnaround time.
*Biomarker-driven therapies include targeted therapies and immune checkpoint inhibitors.
†Data has been normalized to a patient population of 1000 from the initial analysis of 38,068 patients to easily demonstrate the number of eligible patients with NSCLC who may be lost during the diagnostic journey. Original data was derived from a sample of 38,068 from the Diaceutics Data Repository in 2019.

REFERENCES

1. Chakravarty D, Johnson A, Jeffrey S et al. *J Clin Oncol*. 2022;40(11):1231-1258 doi:10.1200/JCO.21.02767. **2.** Memorial Sloan Kettering Cancer Center. https://www.mskcc.org/news/first-drug-targeting-her2-mutant-non-small-cell-lung-cancer-approved-by-fda. Accessed November 30, 2022. **3.** Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Non-Small Cell Lung Cancer V.2.2023. ©National Comprehensive Cancer Network, Inc. 2023. All rights reserved. Accessed March 6, 2023. To view the most recent and complete version of the guideline, go online to NCCN.org. **4.** Lindeman NI, Cagle PT, Aisner DL et al. *Arch Pathol Lab Med*. 2018;142(3):321-346 doi:10.5858/arpa.2017-0388-CP. **5.** Pennell NA, Arcila ME, Gandara DR, West H. *Am Soc Clin Oncol Educ Book*. 2019;39:531-542 doi:10.1200/EDBK_237863. **6.** Sadik H, Pritchard D, Keeling DM et al. *JCO Precis Oncol*. 2022;6:e2200246. doi:10.1200/PO.22.00246.

Are you interested in learning more about **Precision Medicine?**

GO TO OUR WEBSITE!

You'll find knowledge checks, additional resources, a digital version of this and other chapters, and more

Looking to speak to a Precision Medicine Liaison? Scan this QR code

NOVARTIS

Novartis Pharmaceuticals Corporation
East Hanover, New Jersey 07936-1080

4/23

271849