

FOSTERING EXCELLENCE IN CARE AND OUTCOMES IN PATIENTS WITH STAGE III/IV NSCLC

FirstHealth Moore Regional Hospital Pinehurst, North Carolina

Introduction

Founded in 1929, FirstHealth Moore Regional Hospital is a community hospital serving Pinehurst, Moore County, and the surrounding area of North Carolina. The comprehensive cancer program includes medical oncology, inpatient and outpatient nursing units, radiation therapy, surgery, an inpatient and outpatient hospice program, clinical trials, a cancer registry, and weekly cancer conferences.

Problem Statement

Biomarker testing in patients with advanced NSCLC may be delayed when tissue samples are inadequate for testing. This may lead to delays in definite treatment planning for patients who have actionable molecular biomarkers.

Improvements

- Develop and implement a pathology-driven reflex testing process so that pathologists have the information they need to order biomarker testing at the time of diagnosis
- Initiate a liquid biopsy order at the time of diagnosis if it appears that the tissue is likely to be insufficient for testing

At FirstHealth, the lung cancer team focused their efforts on improving the timeliness of biomarker testing and proactively ordering liquid biopsies (circulating tumor DNA testing) when tissue samples were likely to be insufficient for testing.

The team developed several new processes to improve communication between the pulmonologists performing the biopsy and the pathologists analyzing the tissue samples. To reduce delays in test ordering, they established a new pathology-driven reflex process that would enable pathologists to order biomarker tests in eligible patients with advanced lung cancer.

At the time of diagnosis, pathologists were informed by the pulmonologists whether the patient was suspected of having advanced cancer and whether body imaging had revealed suspicious sites of metastatic disease. This information allowed pathologists to make the diagnosis of advanced NSCLC and simultaneously order the necessary biomarker tests without waiting for additional information. Data on turn-around times after ordering biomarker testing were available on 6 patients during the follow-up period. The average time from when the biomarker test was sent to when it was returned was 16.3 days (range: 7 to 27 days). All tissue samples were being sent to NeoGenomics for biomarker testing.

As pathologists reviewed biopsy tissue samples obtained by the pulmonologists, if they determined that the quality or quantity of tissue was likely to be insufficient for testing, they sent the limited tissue sample for PD-L1 testing and informed the clinical team to order a liquid biopsy to look for biomarkers such as EGFR, ALK, ROS-1, etc. This approach enabled the cancer team to obtain actionable results quicker and to reduce delays prior to initiating definitive treatment plans. The team also aimed to achieve consensus regarding which labs should perform the liquid biopsy testing. While they had some limited experience using Biodesix, they were also aware that the FDA had recently approved two liquid biopsy tests for solid cancers: FoundationOne Liquid CDx and Guardant360 CDx. The team decided to try Inivata, FoundationOne, and Guardant to see how their services and reports compared with Biodesix. Near the end of the project, the team was leaning towards primarily using Inivata because of their merger with NeoGenomics.

Conclusion

By developing an improved workflow that incorporated better communication between pulmonology and pathology, the FirstHealth cancer team reduced delays and variation in biomarker test ordering patterns.