Linking Oncology Diagnostic Labs to Assess their Effectiveness in Supporting Immunotherapy Treatment Selection in Lung Cancer

Background

A molecular diagnostics company developed a blood test to support treatment selection for patients with advanced non-small cell lung cancer (NSCLC). While many patients with EGFR-mutated, PDL-1 expressing NSCLC respond to immune checkpoint inhibitors (ICIs), many do not. An unmet medical need existed for a more precise test to determine which patients with this tumor type would respond to ICIs. The client's blood test purported to predict patient response to ICIs.

The client conducted a three-year real-world observational study of more than 3,570 NSCLC cancer patients over the age of 18 with wild-type negative or unknown EGFR genetic mutations at all lung cancer stages and any histology. The objective of the study was to understand if use of the test influenced physician therapeutic selection of immune checkpoint inhibitors and whether those test-driven therapeutic choices improved progression-free and overall survival.

The primary endpoint was the percentage change in treatment patterns based on test results. Secondary endpoints included progression-free survival (PFS) and overall survival (OS).

Problem

For this completed observational study, the client sought to evaluate the diagnostic test's relationship to PFS and OS beyond the three-year study period. Extending the follow-up period would allow the diagnostics company to further evaluate the study's primary and secondary endpoints, providing additional evidence to demonstrate that the precision diagnostic supported better therapeutic selection which resulted in patients getting therapies that were more effective in treating their specific cancer.

Solution

The client used Datavant to find a partner with claims data that could be linked to their trial patients to enable long-term follow-up on these patients. The client used the Datavant platform to create tokens (de-identified, encrypted codes) using patients' names, dates of birth, social security number and sex. The tokens were used to analyze whether patients in the trial were also found in other claims data sets.

Result

After performing an overlap analysis with one claims partner in the Datavant partner ecosystem, about 2,600 were found to overlap with the partner's trial data. Analysis of the overlapping patients is underway.

By replacing personal information with a token, you can find a patient in many datasets

Input data		Configured template with rules	Output data
First Name	Jane	Remove	Null
Last Name	Doe	Remove	Null
Sex	Female	Pass through	Female
Date of Birth	May 8th, 1971	Convert to birth year	01/01/1971
Social Security Number	123-45-6789	Remove	Null
		Create encrypted key ("Patient Key") from name, DOB and sex	AA001

Why Datavant

50+ trials already use Datavant tokens to enable linking to real-world data

Datavant connects the largest health data ecosystem with more than 500 real-world data partners

Datavant tokenization can be **seamlessly embedded** into trial operation workflows for easy implementation by site administrators