# Analytics-driven, comprehensive patient profiles drive true patient-centered care

THE CHALLENGE

WHAT CRITICAL DATA ARE WE MISSING BY IGNORING UNSTRUCTURED DATA?

Despite the wealth of patient data generated across healthcare systems, the vast majority—around 80%—is unstructured and often goes untapped. This includes physician notes, pathology reports, and lab narratives that offer deep context into a patient's journey. Traditional analytics rely heavily on structured data like ICD codes and lab values, which explain what is happening but not why. In many cases, especially in complex or rare diseases like NSCLC, ICD codes alone fail to capture the full clinical picture—making it difficult to reliably identify patients based on structured records alone. However, by mining unstructured data sources, it becomes possible to detect disease indicators, symptom patterns, and clinical impressions that precede or supplement formal coding. As a result, key insights are missed, contributing to delayed diagnoses, misdiagnoses, and a fragmented understanding of patient needs.
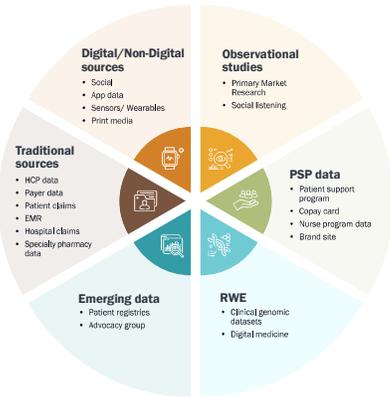
The company's commercial team aimed to identify patients most likely to benefit from their NSCLC targeted therapy by leveraging both traditional and non-traditional datasets, alongside implementing biomarker gene management strategies

How could the company efficiently identify these patients and engage the HCPs treating them?

THE APPROACH

DATA-INCLUSIVE METHODOLOGY TO CAPTURE OVERLOOKED CASES

Data Integration and preparedness

- Merge structured and unstructured data, including clinical, behavioral, and socioeconomic inputs.

AI & NLP Application

- Application of NLP and machines learning models

Build Patient and Physician Profiles

- Develop dynamic profiles and segment based on risk, behavior, and treatment response that update over real time.

Collaborate Cross-functionality

- Align all stakeholders to ensure accuracy and usability in real world workflows

Drive Change Management

- Support the rollout of tools and results through training and communication.

THE OUTCOME(S)

This comprehensive approach enabled us to identify previously undiagnosed patients exhibiting early but overlooked symptom clusters of a rare disease, leading to more timely and targeted interventions.

Across clients, insight quality improved by 25%, and intervention implementation cycle times decreased by 20%. With this level of AI-driven precision, healthcare teams were able to tailor patient engagement—offering personalized support strategies that accounted for treatment barriers, digital engagement preferences, and predicted adherence risks.

THE RESULT: DEEPER PATIENT UNDERSTANDING, IMPROVED OUTCOMES, AND SMARTER RESOURCE ALLOCATION.

Our analysis revealed a significant increase in appropriate therapy initiation following the identification and engagement of patients. The Predictive models accurately surfaced individuals exhibiting early but overlooked symptom patterns, allowing for timely interventions. The following screenshots illustrate how these predictions translated into real-world impact, showing drug utilization trends post-identification, individual patient probability scores and profile summaries.

PREDICTED PATIENTS DISTRIBUTION

Number of Patients by State
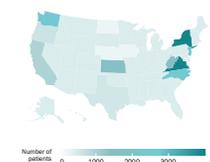
UTILIZATION OF PREDICTED PATIENTS

Number of Patients by State

PATIENT COHORT PROBABILITY SCORE AND THEIR AFFILIATED ZIP3

PATIENT COHORT		PATIENT PROBABILITY SCORE	COHORT WEIGHTAGES	
COHORT 1	Specific Patients Identified likely needing treatment	67%	67%	
COHORT 2		55%	55%	Zip3 Tagging (based on the patient weighted potential)
COHORT 3	Large Counts of likely patients potentially needing treatment	19%	19%	
COHORT 4		14%	14%	
COHORT 5		9%	9%	

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