KYTHERA
DECIPHERING HEALTHCARE

Precision Data for Alzheimer's Disease Research and Market Strategy

Background

Life sciences and biotech companies engaged in Alzheimer's research and treatment development require complete, longitudinal patient data to accurately track disease progression, identify treatment efficacy, and support regulatory and commercial goals. Yet, accessing data of this caliber—data that is both comprehensive and reliable—remains a major hurdle. Kythera Labs overcomes these challenges by curating high-confidence data assets with an advanced approach that minimizes missing information, enabling companies to generate insights with greater accuracy and confidence.

› Challenge

In Alzheimer's research, fragmented data is a persistent issue, particularly as patient care paths are often discontinuous and lack documentation of long-term outcomes. Critical gaps in patient encounters, treatments, and provider interactions create "data missingness," delaying or hindering researchers' ability to generate insights that can inform regulatory submissions, assess new therapies or strategize commercial outreach.

› Kythera Labs' Solution

Kythera Labs' Chronic Conditions Enriched Dataset leverages a sophisticated curation process to deliver complete and reliable datasets tailored to Alzheimer's Disease and related conditions. By scoring and filtering data based on probability of missingness, Kythera ensures that only well-documented patient records are included. This curated data asset provides an unparalleled view of the Alzheimer's patient journey, enhancing research accuracy, regulatory preparedness, and market strategy.

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Kythera Labs' Curated Data Approach

1 **Multi-Payer Data Aggregation**

Data from multiple payer sources is integrated to reduce bias and broaden the scope of patient encounters. This aggregation captures a more complete record of health interventions, from diagnosis to long-term disease management, across various healthcare settings.

2 **Specialized Missingness Probability Modeling**

Kythera's proprietary model calculates the probability of missingness at the care pathway level, identifying data segments across the Alzheimer's care pathway that are statistically likely to be incomplete. By assigning a score to each record, Kythera ensures only those meeting a strict completeness threshold remain, creating a dataset with minimal gaps in the chronic care path of Alzheimer's patients.

Key Questions Answered

- Which HCPs manage Alzheimer's?
- Where are treatment centers?
- Who is prescribed Alzheimer's therapies?
- How do comorbidities affect outcomes?
- What are Alzheimer's demographics?

3 **Longitudinal Data Capture and Cohort Filtering**

Spanning from 2018 to the present, Kythera's Alzheimer's dataset provides a continuous, multi-year view of patient trajectories. In this instance, patients were filtered to meet a high data completeness score (0.15 probability of missingness), resulting in a robust dataset that captures disease progression, therapy responses, and care consistency in this cohort.

4 **Categorization of Patient Encounters by Treatment Pathways**

Kythera categorizes patient encounters to map treatment types and identify patterns in the patient journey. By comparing actual care pathways to baseline models, Kythera can detect atypical patterns or data gaps, providing a clearer picture of Alzheimer's treatment effectiveness and healthcare delivery.

5 **Data Enrichment with Therapeutic and Provider Details**

Kythera's datasets include granular information about therapies and prescribing providers, enabling targeted insights. This enrichment is crucial for understanding the effects of specific treatments and identifying active providers within the Alzheimer's care network.

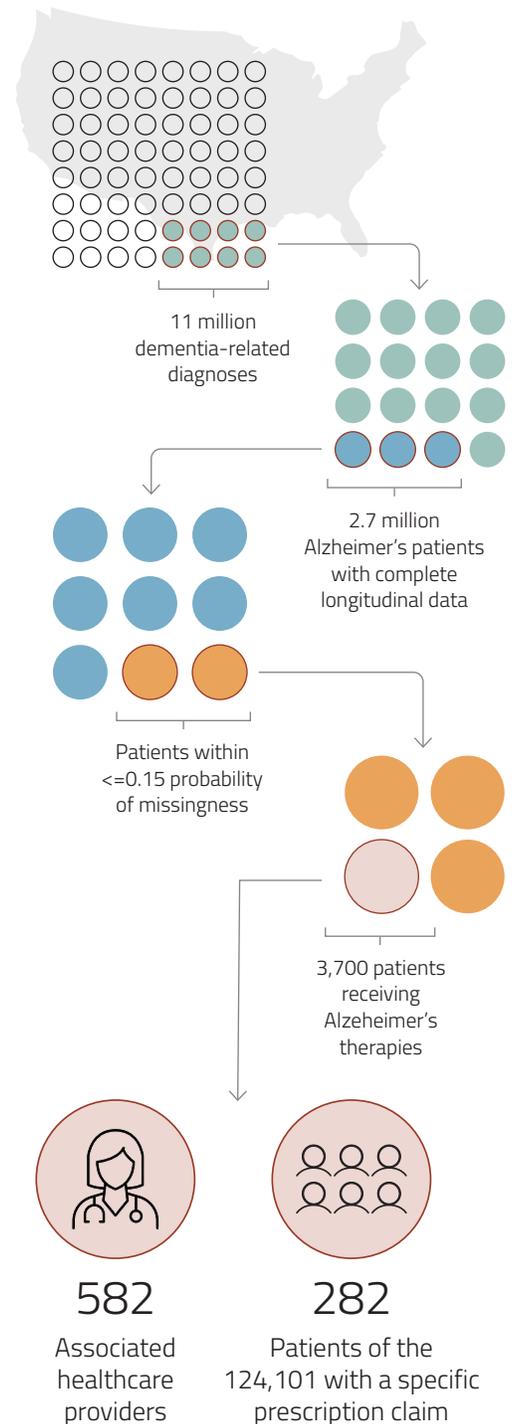KYTHERA

› Case in Action

A global biotech company approached Kythera Labs to build a reliable Alzheimer's patient cohort for research and commercialization purposes. Using Kythera's Chronic Conditions Enriched Dataset, the company initially identified 11 million dementia-related diagnoses, refining this down to a subset of 2.7 million patients meeting stringent data completeness criteria. Kythera's proprietary model further refined the cohort to 3,700 patients with at least one claim for Alzheimer's treatment and a dementia-related diagnosis, where the patients' care pathways were deemed fully observed. The care pathways associated with these patients spanned across 582 healthcare providers. Finally, this highly specific subset was further narrowed to 282 patients with a specific prescription claim for an Alzheimer's therapy. This uniquely comprehensive dataset helped the biotech team assess therapy effectiveness, support regulatory submissions, and strategically engage a high-value group of healthcare providers involved in Alzheimer's care.

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Impact on Alzheimer's Research and Commercialization

Kythera Labs' curated data solution delivers key benefits for Alzheimer's-focused life sciences and biotech organizations:

- **Enhanced Evidence Generation for Regulatory Success:** Reliable data on patient journeys and treatment responses simplifies the submission of Alzheimer's therapies, strengthening the case for efficacy and safety.

- **Precision Cohort Identification for R&D:** By providing a robust, analysis-ready cohort of Alzheimer's patients, Kythera enables researchers to track patient outcomes, treatment adherence, and the longitudinal impact of therapies.

Patient Waterfall
Alzhemier's Disease

11 million dementia-related diagnoses

2.7 million Alzheimer's patients with complete longitudinal data

Patients within <=0.15 probability of missingness

3,700 patients receiving Alzheimer's therapies

582
Associated healthcare providers

282
Patients of the 124,101 with a specific prescription claim

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- **Strategic HCP Engagement:** With insights into 582 active Alzheimer's HCPs, organizations can optimize outreach and education efforts for key healthcare providers.

- **Improved Market Strategy:** Kythera's dataset provides an in-depth view of patient demographics, care pathways, and provider networks, enabling targeted market strategy and competitive positioning.

› Why Kythera Labs?

Kythera Labs' deep expertise in multi-dimensional healthcare data, leading-edge data technology, and advanced data science methodologies offers a distinct advantage for healthcare and life science professionals engaged in complex research and commercialization efforts. Alzheimer's disease research, with its need for longitudinal, complete, and nuanced patient data, is just one example of how Kythera's approach provides exceptional support. By curating comprehensive datasets and employing sophisticated techniques like multi-payer data aggregation and specialized probability modeling for data completeness, Kythera Labs addresses the specific challenges that arise in chronic condition research.

Beyond Alzheimer's, Kythera Labs' data solutions empower healthcare and life science teams across various therapeutic areas and research domains. Our innovative data technology tools and rigorous methodologies allow professionals to derive meaningful insights with greater speed and confidence, whether advancing treatment efficacy studies, optimizing patient journey mapping, or refining market strategy. For organizations requiring precise, high-quality data tailored to their unique needs, Kythera Labs stands as an invaluable partner in transforming complex data into actionable, reliable insights.

About Kythera Labs Kythera Labs is a data and technology company that enables Healthcare and Life Sciences organizations to rapidly integrate, access, and analyze healthcare data with scale and speed using the Wayfinder data science platform and pre-configured data pipelines, data science toolkits, and remastered data sets for competitive advantages across markets. Learn more at www.kytheralabs.com or follow Kythera Labs on LinkedIn.

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346 Main Street
Franklin, TN 37064
www.kytheralabs.com