Driving innovation across the drug lifecycle with data, analytics and AI

For leading Life Sciences organizations, the goals of identifying life-changing discoveries and innovative treatment strategies are critical to delivering quality patient outcomes. By leveraging modern analytics and AI technologies, Life Sciences organizations can now quickly analyze population-scale, real-world data sets to uncover efficiencies across the drug lifecycle. The outcome from these efforts: more targeted, safer and effective treatments that cost less to develop and reach patients in need faster.

Leading life sciences organizations are driving innovation with Databricks

Biogen

Genetic Target Identification

Analyzed 2 million variants in minutes, enabling their teams to identify high-quality targets for neurodegenerative diseases like Alzheimer's and Parkinson's.

CVSHealth

Personalized Recommendations

Improved medication adherence by using ML to analyze 70 million prescriptions and personalize patient outreach

AMGEN

Clinical Trial Optimization

Used real-world data to model patient selection criteria and site placement for clinical trials with a goal of designing smaller trials and improving prioritization of trial candidates.

Deliver better outcomes with Databricks Lakehouse platform

Databricks provides Life Sciences companies with a simple, open and collaborative Lakehouse platform for all their data, analytics and AI. With Databricks, Life Sciences companies are driving innovations and efficiencies across the entire drug lifecycle powered by data and AI.

All your healthcare data

Clinical trials	Structured
Research Publications	Unstructured
Imaging	Unstructured
Genomic	Structured
Chemical informatics	Structured
Manufacturing	Unstructured
EHR	Semi-structured
Disease registry	Semi-structured
Provider notes	Unstructured
Sales and Marketing operations	Structured

Reliable, real-time processing

DATA LAKEHOUSE

Process, manage and query all your data

Analytics capabilities for every use case

- Accelerate target discovery
- Optimize clinical trials
- Enable intelligent manufacturing
- Improve patient targeting
- Monitor drug safety in real-time

DATA CHALLENGE	DATABRICKS SOLUTION
Data silos limit insights across R&D The complexities of data integration can often grind drug development progress to a halt as organizations lack the ability to efficiently scale their analytics and bring together structured and unstructured data.	**Single view of the entire drug lifecycle** Bring together all your structured and unstructured data across the drug lifecycle — such as genomics, imaging, EHR and clinical trial data — with a simple, scalable and open Lakehouse Platform in the cloud.
Delayed data inhibit critical insights Legacy data architectures struggle to reliably manage streaming data feeds. This is a critical blocker in Life Sciences where real-time insights — whether from the manufacturing line or medical device monitoring drug efficacy in the real-world — are critical to the fast and safe delivery of new therapeutics.	**Real-time insights on real-world data** From health wearables to IoT sensors, the Databricks Lakehouse powered by Delta Lake enables organizations to reliably ingest streaming data and seamlessly blend with historical data at scale to unlock real-time insights that power the development and delivery of new therapeutics.
Outdated and disjointed analytics and AI tools Legacy data warehouses lack the ability to provide predictive analytics needed to unlock new innovation. As a result, organizations invest time in adopting disconnected AI/ML tools creating data consistency issues and hindering productivity and collaboration.	**Personalize care with predictive analytics** Enhance your ability to develop and recommend the right treatment to the right patient at the right time with a single platform for all your business analytics and machine learning. Collaborative analytics workspaces connect directly to your data and enable teams to rapidly innovate together.

Databricks healthcare customers

Biogen · AMGEN · GlaxoSmithKline · AstraZeneca · Takeda · REGENERON · CVSHealth · SANOFI · HUMAN LONGEVITY, INC. · ELSEVIER · ROIVANT SCIENCES · Livongo

Data + AI use cases in life sciences

From drug discovery to commercialization and beyond, data and AI are helping drive innovation across the entire drug development lifecycle and accelerate the delivery of targeted treatments to those that need them the most.

Administrative Process Automation: Enhance the ability to discover new drugs and therapeutics faster and cheaper

- Genomics-based target identification
- Lakehouse for Cancer Cell Line Encyclopedia (CCLE)
- Improved QSAR workflows using ML

Clinical Trial Design: Optimize clinical trial protocols for speed and success

- Optimize trials with real-world data
- Compute complex biomarkers with ML
- Manage clinical trial supply chains

Efficient Manufacturing: Improve operational efficiencies to boost time-to-market and profitability

- Forecast seasonal demand
- Predictive maintenance
- Identify bottlenecks in fulfillment

Drug Commercialization: Leverage actionable insights to augment the performance of marketing and sales

- Recommend next-best steps for sales
- Identify underdiagnosed patients
- Improve ad spend efficiency

Drug Safety and Effectiveness: Ensure the safe and effective delivery of treatments to patients in the real world

- Monitor real-world effectiveness
- Automate signal detection

The Databricks Impact

Databricks enables life sciences organizations to drive innovations in the R&D lifecycle while reducing management overhead through detailed analysis of disparate and complex data, machine learning and AI.

Accelerate innovations for groundbreaking care

Our healthcare-focused products (genomics runtime), libraries (Project Glow for genomics and Smolder for ingesting EHR and claims data), and data science solution accelerators provide validated tooling that you can roll into production today. They are the fastest way to uncover new treatment programs and identify opportunities to improve patient care at a massive scale.

30-70% gains in productivity

Impact: More productive data scientists reduce the time needed to develop a new AI model.

1.6x better compute consumption

Impact: Reduces infrastructure costs for critical workloads by >60%.

Learn more about our Life Sciences solutions: dbricks.co/LifeSciences

databricks