

Data Science for Healthcare

Top 4 Use Cases to Accelerate Innovation

Overview

While the promise of big data in the health industry has never been more attainable, putting it into practice has never been more challenging. From performing predictive analytics, to improving customer and patient outcomes, to transforming treatment, leveraging data to innovate has become table stakes to stay in the game. The best way to do this is with data science and machine learning. Data science helps you extract knowledge from your data so you can make fact-based business decisions, all while protecting sensitive patient and customer information.

Today, leading health carriers and providers are using data science to drive a number of innovative use cases. We've created this guide to help you identify areas where data science can take your health business to the next level.



Genomics & Precision Medicine

DNA SEQUENCES - Fast-Q, BAM, SAM, VCF, EXPRESSION

- Single Cell Sequencing
- Biomarker, Genetic, Variant & Population Analytics
- ADAM & HAIL on Databricks

Outcome: Faster innovation for drug development



IoT Device Analytics

SENSOR DATA - Readings, Time Series, Event Data

- Aggregation of Streaming Events
- Predictive Maintenance
- Anomaly Detection

Outcome: Predictive analytics transforms quality of care



Clinical & Claims Data

REAL WORLD ANALYTICS - HL7 / CCD, 837, PHARMACY, REGISTRY, EMR

- Claims Data Warehouse
- Readmission Predictions
- Efficacy and Comparative Analytics
- Prescription Adherence
- Market Access Analysis

Outcome: Improved patient outcomes and cost effectiveness



Social Analytics

SOCIAL DATA LISTENING - Social Media, Adverse Events, Unstructured

- Real-time patient feedback via topic modelling
- Analytics across Publication Data

Outcome: Improved patient communications and feedback

What is Data Science?

Data science is a combination of various tools, algorithms, formulas, and machine learning principles used to draw hidden patterns from raw data. Unlike rear-view reporting, data science reveals the why behind your data—not the how. Data science helps you:

- Find the best customers, charge the right price
- Allocate costs accurately
- Make data a key element of strategy
- Minimize work in progress and inventory
- Maximize innovation

Extract knowledge from data in any form

Data science initiatives can deliver significant value to enterprises when the right opportunities are identified, the business enables using data to make decisions, and new talents and technology are explored.