



Transforming Analytics for a Leading Pharmacy Benefit Management Company

AHEAD and AWS partnered with a leading pharmacy benefit management (PBM) company to modernize its enterprise data and analytics environment, enabling faster insights, deeper visibility, and AI-powered decision-making. By building a centralized data lake and adopting a suite of AWS analytics services, the PBM moved from siloed, spreadsheet-based reporting to a secure, scalable, cloud-native platform.

The solution unified key data sources—such as prescription claims, member information, pharmacy networks, and rebate contracts—allowing the PBM to streamline operations, reduce costs, and improve outcomes for health plan sponsors and members alike.

TOP 3 TAKEAWAYS

Data platform modernization via AWS enabled streamlined operations and AI-driven business insights.

- 1** AHEAD data teams rapidly migrated and catalogued all available data to a new Amazon S3 data lake.
- 2** AHEAD built repeatable ETL pipelines to clean and transform prescription claims, rebate data, and formulary lists for faster data analysis.
- 3** Because of their new data foundation, the client is able to pilot predictive models to detect fraud, forecast revenue, and much more.

The Challenge

DISCONNECTED SYSTEMS AND DELAYED INSIGHTS

As one of the largest PBMs in the U.S., the company manages millions of prescription drug claims, coordinates with hundreds of pharmacy partners, and works with dozens of health plans and pharmaceutical manufacturers. But its legacy infrastructure couldn't keep up with the increasing demand for timely, trustworthy data.

Business teams—across areas like clinical services, formulary and rebate management, compliance, and member engagement—relied on manual data extracts and outdated reporting tools. Each team had its own version of the truth, and getting a clear, timely view of performance metrics, such as formulary adherence or rebate yield, was difficult and slow.

The PBM needed a unified analytics platform that could:

- Ingest large volumes of structured and semi-structured data from internal and partner systems
- Improve data quality and governance
- Enable real-time dashboards and ad hoc analysis
- Support machine learning to detect fraud, forecast spend, and optimize programs

The Solution

A MODERN ANALYTICS PLATFORM BUILT ON AWS

AHEAD collaborated with the PBM's IT and analytics teams to design and implement a secure, cloud-native data platform powered by AWS.

Data Ingestion & Storage

Using **AWS Database Migration Service**, **AWS DataSync**, and **Amazon AppFlow**, the PBM rapidly ingested data from internal databases, SaaS applications, and partner systems. All data was landed in Amazon S3, the foundation of the new enterprise data lake.

Data Governance & Cataloging

AWS Lake Formation enabled secure, role-based access and centralized governance. Data was cataloged for discoverability and made available for query across multiple analytics services.

Data Preparation & Transformation

With **AWS Glue**, **AWS Glue DataBrew**, and **Amazon EMR**, the PBM built repeatable ETL pipelines to clean and transform prescription claims, rebate data, and formulary lists. Business analysts could explore and refine data sets without relying on engineering teams.

Streaming & Real-Time Data

For scenarios like real-time claims adjudication or fraud detection, the PBM used **Amazon Kinesis** and **Amazon Managed Streaming for Apache Kafka** to process streaming data feeds and trigger alerts within seconds.



Analytics & BI

Teams across compliance, clinical operations, and finance use **Amazon Athena** and **Amazon Redshift Spectrum** to query data directly from S3. Executives and analysts rely on **Amazon QuickSight** for self-service dashboards that track formulary efficiency, rebate capture, member adherence, and more.

Machine Learning & AI

Using **Amazon SageMaker** and **Amazon AI** services, the PBM began piloting predictive models to detect fraudulent claims, forecast rebate revenue, and identify members at risk for non-adherence.

Business Outcomes

SCALABLE, SECURE, AND INSIGHT-DRIVEN

Unified View of Data

Claims, rebate, and member data are now consolidated in a central lake, eliminating silos and manual reconciliation.

Faster Decision-Making

What once took days is now available in minutes—real-time dashboards and self-service queries have improved agility.

Improved Compliance and Audit Readiness

With **AWS Lake Formation**, access is secure and auditable, meeting HIPAA and other regulatory requirements.

AI-Enabled Innovation

Predictive models now support proactive strategies to reduce fraud, optimize formulary mix, and improve member outcomes.

Scalable Architecture

The platform easily scales to handle seasonal peaks in claims volume, while reducing total cost of ownership.

AHEAD + AWS

POWERING PBM INNOVATION

The PBM now has a modern analytics foundation that supports growth, innovation, and better service to its clients and members. By combining AHEAD's deep healthcare and data expertise with the power of AWS services, the organization is moving beyond reactive reporting to a future of proactive, AI-driven insights.

Whether it's analyzing trends in drug utilization, optimizing rebate strategy, or detecting waste and abuse in real time, the PBM is now positioned to lead with data.

AWS Services

AWS Database Migration Service

AWS DataSync

Amazon AppFlow

Amazon S3

AWS Lake Formation

AWS Glue

AWS Glue DataBrew

Amazon EMR

Amazon Kinesis

Amazon Managed Streaming
for Apache Kafka

Amazon Athena

Amazon Redshift Spectrum

Amazon QuickSight

Amazon SageMaker

Amazon AI services



AHEAD

Combining cloud-native capabilities in software and data engineering with an unparalleled track record of modernizing infrastructure, we're uniquely positioned to help accelerate the promise of digital transformation.

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