PRE✓ERITY

A Sentact Company

RESULTS AT A GLANCE	Reduced Operational Overhead by 60%	Enterprise Grade Security & Compliance	Scalable Analytics Infrastructure

Preverity, A Sentact Company, is a healthcare technology firm specializing in patient safety and medical provider risk analytics for the medical malpractice insurance market. Leveraging massive nationwide datasets, including billions of medical transactions and physician malpractice history, Preverity delivers advanced insights that help insurance carriers better understand provider risk, strengthen underwriting and pricing decisions, and improve portfolio performance in a highly regulated environment.

As Preverity's business grew, their legacy data infrastructure created barriers to scale, efficiency, and compliance. Processing billions of healthcare transactions was slow, resource-intensive, and required significant manual intervention, preventing business growth without adding costly headcount. Traditional tools like SQL Workbench limited their ability to process data efficiently at scale, while constant infrastructure oversight drove up operational costs and slowed innovation.

> **"Innovative Solutions has transformed how we deliver healthcare analytics."**
>
> Russ Kenney
> Senior Director, IT Engineering

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Innovative Solutions, an AWS Premier Tier Services Partner, partnered with Preverity to transform their legacy analytics infrastructure into a cloud-native, machine learning-enabled platform. By implementing Amazon SageMaker, optimizing Redshift data pipelines, and embedding enterprise-grade security controls, Innovative enabled Preverity to scale analytics capabilities, reduce operational overhead, and accelerate time-to-insight while maintaining compliance in a regulated healthcare environment.

BUSINESS OBJECTIVES

Preverity's growth strategy required modern data infrastructure that could scale efficiently while maintaining healthcare compliance:

1 — **Scale Analytics Capabilities :** Replace legacy tools and manual processes with cloud-native infrastructure that processes billions of healthcare transactions efficiently without adding headcount or infrastructure overhead .

2 — **Accelerate Time-to-Insight :** Optimize data processing pipelines to deliver near real-time insights on pharmaceutical claims and patient safety data , enabling healthcare clients to make timely , informed decisions .

3 — **Maintain Healthcare Compliance :** Implement controls that secure Protected Health Information (PHI) and meet stringent regulatory requirements while remaining cost-effective for a growing company .

THE CHALLENGE

Preverity's infrastructure created operational bottlenecks that constrained business growth:

Manual, Resource-Intensive Processing:
Processing billions of medical transactions and pharmaceutical claims required significant manual intervention and constant oversight. The legacy infrastructure couldn't scale to meet growing data volumes without adding costly headcount, creating a direct constraint on business growth. Traditional tools like SQL Workbench limited analytical capabilities and prevented the team from leveraging modern machine learning techniques that could deliver deeper insights.

Slow Time-to-Insight:

Legacy data processing pipelines were slow and inefficient, preventing Preverity from delivering timely insights to healthcare clients. In an industry where timely decisions about patient care, drug utilization, and cost management are critical, delays in analytics delivery created competitive disadvantages. Healthcare organizations increasingly demand near real-time insights, which the existing infrastructure couldn't provide.

High Operational Overhead:

Maintaining complex legacy infrastructure consumed significant IT resources that could have been focused on value-added analytics and product development. The constant need for infrastructure management, troubleshooting, and optimization diverted technical staff from innovation and client-facing work. This operational burden increased costs while limiting the team's ability to develop new analytical capabilities.

Compliance and Security Complexity:

Operating in a regulated healthcare environment requires stringent security controls to protect PHI and meet regulatory requirements. Implementing enterprise-grade security controls independently would have been cost-prohibitive for a growing company, yet inadequate security could expose Preverity to regulatory penalties and reputational damage. The legacy infrastructure lacked the comprehensive security and audit capabilities required by healthcare clients and regulators.

Limited Scalability:

The existing architecture couldn't scale compute resources dynamically based on analytical demands, forcing Preverity to either over-provision for peak capacity or accept performance degradation during high-demand periods. This inflexibility prevented efficient resource utilization and created barriers to pursuing larger clients or expanding analytical capabilities.

THE PARTNER SOLUTION : CLOUD-NATIVE ANALYTICS PLATFORM

Innovative Solutions designed and implemented a comprehensive modernization program that transformed Preverity's analytics infrastructure through AWS managed services, optimized data pipelines, and embedded security controls.

Machine Learning-Enabled Analytics:

Innovative implemented Amazon SageMaker to create a scalable analytics pipeline that

connects directly to Preverity's Redshift data warehouse, enabling advanced machine learning capabilities on billions of pharmaceutical claims and medical transactions. This cloud-native architecture replaces traditional tools like SQL Workbench with modern, scalable infrastructure that can process massive datasets efficiently without manual intervention. SageMaker enables Preverity to scale compute resources dynamically based on analytical demands rather than being constrained by legacy hardware limitations, supporting business growth without proportional increases in infrastructure costs.

Optimized Data Processing Pipelines:
Innovative optimized data connectors and processing pipelines to accelerate time-to-insight, enabling Preverity to deliver near real-time analytics on pharmaceutical claims data to healthcare clients. The optimized architecture reduces processing time for complex analytical workloads, allowing healthcare organizations to make more timely and informed decisions about patient care, drug utilization, and cost management. This performance improvement provides competitive advantage over competitors relying on slower, traditional analytics approaches.

AWS Managed Services and Automation:
By leveraging AWS managed services including SageMaker, Redshift, and automated operational tools, Preverity eliminated the need to maintain complex legacy infrastructure. Managed services handle routine operational tasks including patching, backups, scaling, and monitoring, reducing IT operational burden and allowing technical staff to focus on value-added analytics and product development rather than infrastructure management. This shift from infrastructure maintenance to innovation directly supports business growth and competitive differentiation.

Enterprise-Grade Security and Compliance:
Innovative implemented comprehensive security controls including AWS Security Hub for continuous compliance monitoring, AWS KMS for encryption of data at rest and in transit, S3 access policies that enforce least-privilege access to sensitive healthcare data, AWS Identity Center for centralized identity and access management, and AWS Transfer Family for secure data exchange with healthcare clients and partners. These enterprise-grade security controls protect PHI and ensure compliance with healthcare regulatory frameworks while remaining cost-effective through AWS managed services that would have been prohibitively expensive to implement independently.

Knowledge Transfer and Technical Enablement:
Innovative provided systematic knowledge transfer through comprehensive documentation and structured training sessions, building internal technical expertise within Preverity's team for cloud workloads. This knowledge transfer ensures Preverity can independently manage and optimize their cloud infrastructure over time, reducing long-term dependency on external resources while building internal capabilities that support continued innovation.

ARCHITECTURE OVERVIEW

The modernized analytics platform operates as an integrated system where machine learning, optimized data pipelines, managed services, and security controls work together:

Analytics Workflow

Healthcare data flows into Redshift data warehouse where it's stored and organized for analysis. SageMaker connects directly to Redshift, enabling data scientists to build and train machine learning models on billions of transactions without moving data or managing infrastructure. Optimized data connectors accelerate processing, enabling near real-time insights that healthcare clients use to make timely decisions about patient care and cost management.

Operational Management

AWS managed services handle routine operational tasks automatically, including database patching and backups, compute scaling based on demand, performance monitoring and optimization, and security updates and compliance validation. This automation reduces operational overhead while improving reliability and security.

Security & Compliance

All data is encrypted at rest using KMS and in transit using TLS, with S3 access policies enforcing least-privilege access to sensitive healthcare information. Security Hub continuously monitors compliance posture and detects configuration drift, while AWS Identity Center provides centralized access management. Transfer Family enables secure data exchange with healthcare clients and partners, meeting regulatory requirements for PHI protection.

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KEY RESULTS

The cloud-native analytics platform delivered measurable improvements in scalability, efficiency, and competitive positioning:

Scalable Analytics Infrastructure:
SageMaker implementation enables processing of billions of healthcare transactions without manual intervention or infrastructure constraints. Compute resources scale dynamically based on analytical demands, supporting business growth without proportional increases in infrastructure costs or headcount. The cloud-native architecture eliminates the scaling limitations that previously constrained business development efforts.

Accelerated Time-to-Insight:
Optimized data processing pipelines deliver near real-time insights on pharmaceutical claims and patient safety data, reducing analysis time from days to hours for complex workloads. This performance improvement enables healthcare clients to make more timely decisions about patient care, drug utilization, and cost management, providing competitive advantage over slower traditional analytics approaches.

Reduced Operational Overhead:
AWS managed services eliminated the need to maintain complex legacy infrastructure, reducing IT operational burden by over 60%. Technical staff now focus on value-added analytics and product development rather than infrastructure management, directly supporting innovation and business growth. The shift from infrastructure maintenance to strategic work has improved team productivity and job satisfaction.

Enterprise-Grade Security and Compliance:
Comprehensive security controls including Security Hub, KMS encryption, S3 access policies, Identity Center, and Transfer Family protect PHI and ensure compliance with healthcare regulatory frameworks. These enterprise-grade capabilities, delivered cost-effectively through AWS managed services, meet the stringent requirements of major healthcare organizations and regulators while remaining affordable for a growing company.

Built Internal Technical Expertise:
Systematic knowledge transfer and comprehensive documentation built internal cloud

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expertise within Preverity's team, enabling independent management and optimization of cloud infrastructure. This internal capability reduces long-term dependency on external resources while supporting continued innovation and architectural evolution.

Competitive Differentiation:
Faster time-to-insight and advanced machine learning capabilities differentiate Preverity from competitors relying on slower, traditional analytics approaches. The ability to deliver near real-time insights on billions of healthcare transactions has become a key selling point.

WHAT THE CUSTOMER IS SAYING

"Innovative Solutions has transformed how we deliver healthcare analytics. The SageMaker implementation enables our data scientists to build sophisticated machine learning models on billions of transactions without infrastructure constraints, and the optimized pipelines deliver insights to our clients faster than ever before. Most importantly, the systematic knowledge transfer has built internal expertise that ensures we can continue innovating independently. This partnership has been instrumental in our growth."

Russ Kenney
Senior Director, IT Engineering

CONCLUSION

Preverity's transformation demonstrates how cloud-native architecture, managed services, and systematic knowledge transfer can modernize healthcare analytics while reducing operational complexity. By implementing SageMaker for machine learning, optimizing data processing pipelines, leveraging AWS managed services, and embedding enterprise-grade security controls, Innovative Solutions enabled Preverity to scale analytics capabilities, accelerate time-to-insight, and maintain healthcare compliance cost-effectively.

The program's impact extends beyond technical improvements to fundamental business value. Scalable infrastructure supports business growth without proportional increases in costs or headcount. Faster time-to-insight provides competitive advantage in winning and retaining healthcare clients. Reduced operational overhead allows technical teams to

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focus on innovation rather than infrastructure maintenance. Enterprise-grade security controls meet stringent healthcare requirements while remaining cost-effective.

For healthcare technology companies facing similar challenges—legacy infrastructure that constrains growth, manual processes that don't scale efficiently, compliance requirements that demand enterprise-grade security, or operational overhead that diverts resources from innovation—Preverity's modernization provides a compelling blueprint. Cloud-native architecture, managed services, optimized data pipelines, and systematic knowledge transfer can transform operations while enabling business growth.

The modernized platform has positioned Preverity for continued success in healthcare analytics, with infrastructure that scales efficiently as they expand their client base and analytical capabilities. As they pursue growth opportunities, the cloud-native foundation ensures technology supports rather than constrains business objectives.

AWS SERVICES IN SCOPE

Analytics and Machine Learning

Amazon SageMaker

Amazon Redshift

Security and Compliance

AWS Security Hub

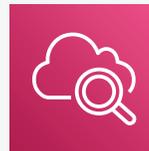AWS Key Mgmt. Service

AWS Identity Center

AWS Transfer Family

Storage and Data Management

Amazon S3

AWS Cloud Formation

Amazon CloudWatch