



HOW HEALTHCARE PROVIDERS AND PAYERS DRIVE OUTCOME-BASED ANALYTICS WITH SNOWFLAKE AND TABLEAU



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SHAPING THE FUTURE OF HEALTHCARE WITH OUTCOME-BASED ANALYTICS

Healthcare data is growing at an astronomical rate—by some estimates, at least 48% annually.¹ While this explosion of information is prompting a new era in healthcare, transforming clinical diagnostics and the delivery of patient care, it has also presented healthcare organizations with the challenge of managing and analyzing extremely large data assets.

At the same time, organizations are changing their value frameworks to focus on clinical outcomes and treatment efficiency. The move from volume-based care to value-based care and value-based reimbursement models has caused healthcare providers (HCPs) and healthcare payers to reevaluate their approach to data analytics.

Many organizations are hindered by legacy data management infrastructures, and they lack an enterprise solution that can manage and leverage big data. To stay competitive, today's healthcare providers and payers need the technology platforms and tools to collect, store, analyze, and share information such as electronic health records, administrative and claims data, patient registries, and clinical trial statistics.

With Snowflake Cloud Data Platform and Tableau, healthcare providers and payers can ensure governance by building a single source of truth to power visual analytics across their organizations. By using Snowflake to securely store, share, and integrate data with multiple sources, providers and payers can democratize data and drive decision-making across their organizations with insights gained from Tableau's visual analytics platform.



¹ "Stanford Medicine 2017 Health Trends Report: Harnessing the Power of Data in Health." stan.md/2TMMfXd

THE CASE FOR OUTCOME-BASED ANALYTICS

Healthcare organizations are constantly evaluating and optimizing every aspect of patient care. The challenge is to more accurately assess quality metrics and lower the risk of errors while achieving higher operational efficiency. To meet this challenge, healthcare providers and payers are deploying outcome-based analytics and using medical data analytics to deliver the best care for patients while achieving lower costs.

Data visualization is the key to outcome-based analytics for massive volumes of complex data. Providers can combine multiple data points to determine which patients are at a higher risk of heart disease based on medical history or to see how various treatments affect a hospital's room availability and finances. Advanced analytics such as artificial intelligence and machine learning can enhance data visualization by processing more detailed data from new sources (for example, behavioral, environmental, patient-reported) to help detect health issues earlier and procure more exact diagnoses. And when hospitals deploy data

visualization with a cloud data platform, they can share results seamlessly to internal and external entities, positively impacting clinical outcomes.

HEALTHCARE PROVIDERS

More patient data is available to HCPs than ever before to inform clinical decision-making, but seamless data exchange is still a challenge in many healthcare systems. According to a 2017 study, less than 30% of U.S. hospitals were able to meet the four criteria of data interoperability: finding, sending, receiving, and integrating electronic patient information from outside providers.²

A cloud data platform that enables data interoperability combined with a data visualization platform can empower HCPs to analyze patient information from various sources and deploy outcome-based analytics. Here are some of the benefits HCPs stand to gain from healthcare data analysis:

- **Better clinical decision-making and population health management:** By linking and analyzing data from disparate sources (including clinical, demographic, and environmental), clinicians can improve treatment outcomes for individual patients or groups with chronic disease states. Such analysis can help them focus on prevention and proactive care, leading to lower costs for both the patient and the healthcare system.
- **Improved patient care access and experience:** With data insights available at different points of care, clinicians and administrators can optimize key care delivery processes such as admittance and discharge. They can improve resource utilization and ensure patients receive quality care in a timely manner.



¹ "Progress In Interoperability: Measuring US Hospitals' Engagement In Sharing Patient Data." bit.ly/2Tum74D

- **Lower costs by reducing inefficiencies:** By aggregating and analyzing patient outcomes on a large scale and identifying wasteful practices (such as unnecessary testing or use of medical products), HCPs can reduce clinical and patient care costs and pursue treatment options that are more sustainable and cost-efficient.

HEALTHCARE PAYERS

U.S. healthcare spending grew 4.6% in 2018, reaching \$3.6 trillion and accounting for 17.7% of GDP. The upward trajectory of U.S. healthcare spending continues to put pressure on healthcare payers to provide cost-effective services that produce high-value results for members. Payers can leverage outcome-based analytics to streamline operations and maximize efficiency. This includes:

- **Better decision-making at every organizational level:** Healthcare data analysis can help payers improve benefits planning, assess providers and treatments, identify emerging trends, and measure the effectiveness of care management.
- **Better customer service:** Developing and sharing analytical insights can enable payers to deliver reliable, timely advice to customers and strengthen payer/provider relationships. Modern analytics platforms can also drive internal efficiency by taking the low-value work out of manually analyzing spreadsheets, allowing managers and service teams to focus on customer-related issues.
- **Lower costs and higher revenues:** More data transparency helps healthcare payers identify and combat fraud, waste, errors, and abuse at every stage of the health claims reimbursement process. Meanwhile, insight into areas such as customer behavior and health plan trends can help payers identify opportunities for new products and offerings that improve the patient/customer experience.



HOW SNOWFLAKE AND TABLEAU DRIVE OUTCOME-BASED ANALYTICS

Snowflake Cloud Data Platform and Tableau can help healthcare providers and payers turn massive volumes of disparate health data into actionable insights. With a secure and flexible enterprise analytics platform, healthcare organizations can improve care outcomes and increase operational efficiencies by embedding powerful visual analytics within key clinical, business, and administrative functions.

By centralizing all sensitive data in a single, secure location, Snowflake provides a single source of truth for Tableau users, bringing complex data sources together for a holistic view of the patient experience. Snowflake can easily handle structured and

semi-structured data simultaneously, which allows Tableau to query both at the same time via its native Snowflake connector. This allows data consumers across the organization to find meaningful insights faster from data without having to run SQL.

Snowflake also enables secure, seamless, and instantaneous data sharing without data movement or copying, enabling interoperability between previously disconnected systems such as electronic medical records and billing. This capability empowers

healthcare providers and payers to store, join, query, and share extremely large and potentially sensitive data sets both internally and externally while remaining HIPAA compliant and safeguarding protected health information.



CUSTOMER SPOTLIGHTS

PALADINA HEALTH

GAINING PERFORMANCE AND SPEED WITH SNOWFLAKE AND TABLEAU

Headquartered in Denver, Colorado, Paladina Health offers patients direct and convenient 24/7 access to physicians by combining increased physician involvement with a data-driven approach to delivering better health outcomes. Paladina wanted an enterprise solution that could support immediate and continuous access to large data sets and that could enable the creation of data visualizations to achieve visibility into its operations and patient care. Developing a solution in-house would be costly and the data modeling and prototyping would be time-consuming, so IT managers sought a solution that was easy to maintain, scalable, and provided high performance.

After implementing Snowflake Cloud Data Platform in conjunction with Tableau's interactive analytics platform, Paladina achieved significant improvements in scalability and performance, while lightening the burden of system maintenance and administration. Tableau's integration with Snowflake meant the organization gained immediate availability to large data sets through a live connection instead of a cached data set that had to be continuously created. Previously, developers were custom coding in statistical software and publishing to a SQL server followed by manual profiling. This often led to performance lapses during analysis. With Snowflake,

the time it took from prototyping data to production went from four days to four hours.

Now, Paladina is achieving greater insights with custom dashboards. These include operational dashboards that analyze client contracts and provide payback metrics, provider dashboards that measure quality of patient care, member-based dashboards that identify individuals at high risk, and primary care dashboards that track patient visits and help determine opportunities for cost savings.

NIB GROUP

USING SNOWFLAKE AND TABLEAU FOR FLEXIBILITY AND SCALE

nib Group was established in Newcastle, Australia, in 1952 to provide health insurance for steel workers at BHP Steelworks, and it has since grown into an international healthcare fund. The company relied on Tableau throughout its organization as the data visualization platform of choice.

nib's IT team initially chose Snowflake as its cloud data platform because it proved to have everything the company needed out of the box. Snowflake easily complemented nib's existing cloud infrastructure, quickly processed its significantly large volumes of data, and flexibly scaled up and out depending on business needs.

The team also chose Snowflake because it supported nib Group's Tableau deployment. By querying live data in Snowflake, the team could quickly calculate key performance indicators in Tableau for metrics across claims, sales, policies, and customer behavior. This seamless integration was necessary when processing and querying massive volumes of data to glean valuable financial and member insights.



DRIVING BETTER OUTCOMES ACROSS THE CARE CONTINUUM

Healthcare providers and healthcare payers have much to gain from driving outcome-based analytics in their organizations. They can improve decision-making, lower the risk of errors, achieve higher operational efficiency and lower costs, and even unlock new sources of value and revenue streams. But most importantly, they can deliver better patient care. Snowflake Cloud Data Platform provides a secure and flexible enterprise analytics platform that can bring complex data sources together and centralize sensitive data in a single, secure location

for Tableau users. Tableau makes visual analytics intuitive and easy to use, leading to strategic insights and data-driven decision-making. Together, Snowflake and Tableau can help healthcare providers and payers leverage big data to drive better outcomes across the care continuum.





ABOUT SNOWFLAKE

The Snowflake Cloud Data Platform shatters the barriers that prevent organizations from unleashing the true value from their data. Thousands of customers deploy Snowflake to advance their businesses beyond what was once possible by deriving all the insights from all their data by all their business users. Snowflake equips organizations with a single, integrated platform that offers the only data warehouse built for any cloud; instant, secure, and governed access to their entire network of data; and a core architecture to enable many other types of data workloads, including a single platform for developing modern data applications. Snowflake: Data without limits. Find out more at [snowflake.com](https://www.snowflake.com).

ABOUT TABLEAU

Tableau helps healthcare organizations become more data-driven. Our enterprise platform makes visual analytics intuitive and easy-to-use, empowering all healthcare leaders, business users, and clinicians, to deliver optimal patient experience and care outcomes. Sign up for Tableau's free, two-week trial at www.tableau.com/trial. To learn more about how Tableau can help your organization visit our healthcare analytics page.

