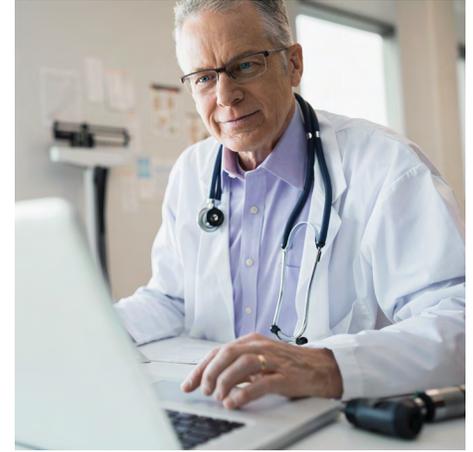


Pulselight

Vertica illuminates real-time data intelligence on 1.5 billion records daily so Pulselight can bring meaningful insights to complex healthcare questions.



Overview

Pulselight was born from the urgent and rapidly growing need to transform the quality, efficiency and cost of how everyone experiences healthcare. The team brings over 50 years of combined expertise, including former executives of healthcare organizations, investigative leaders, data scientists and engineers.

Challenge

With an opioid abuse epidemic taking hold all across the USA, Ohio has the second largest death rate from opioid abuse of all the USA states, with at least 14 Ohioans dying every day from Opioid Use Disorder (OUD), making it the leading cause of injury-related death. Between

2001 and 2016, overdose deaths more than quadrupled. A rate of 39.2 deaths per 100,000 persons is nearly three times higher than the national average.

Medicaid is the largest source of funding for medical and health-related services for people with low income in the United States, providing free health insurance to nearly 75 million low-income and disabled people. In Ohio, 40 percent of adults with OUD are covered by Medicaid. Apart from the obvious cost to human lives, there is also an economic cost for the Medicaid plan to take into account. The medical cost of caring for a person with OUD is double that of the medical costs of a person without OUD. This gets worse over time, because as the OUD develops, the risks of long-term health effects, and overdose, increases exponentially, along with the associated cost.

Jason Helmandollar, Healthcare Solutions Lead at Pulselight, explains further: "We have a real window of opportunity to identify at-risk patients, before it is too late for them. By leveraging the power of analytics we can support targeted intervention, education, and influence policy-making. We needed a solution to help us combine and correlate massive volumes of data in real-time to give our users the instant feedback they need to act immediately and most effectively."

"Leveraging Vertica, we apply a machine learning model to investigate Medicaid claims, using over 100 different features. This helps locate at-risk patients geographically and initiate outreach, education, or intervention programs."

JASON HELMANDOLLAR

Healthcare Solutions Lead
Pulselight



At a Glance

Industry

Healthcare

Location

Austin, Texas

Challenge

Make data actionable, accessible and meaningful by leveraging advanced and predictive data analytics in the fight against the opioid epidemic

Products and Services

Vertica Analytics Platform

Results

- + Enhanced quality of care
- + Advanced analytics gives instant feedback for action
- + Predictive analytics supports the most effective early patient intervention
- + Cost savings through better allocation of state resources

“Early intervention is key in combating the opioid epidemic and avoiding associated cost escalation. Vertica helps us simplify a huge volume of complex and hard-to-find data with lightning speed, enabling us to meet our mission of identifying individuals at high risk of overdose.”

IRENE MANAUTOU WILLIAMS

CEO
Pulselight

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www.vertica.com

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The goal is to make data actionable and accessible to all types of users. With analytics and action working together, at-risk patients or problematic prescribers and pharmacies can be detected for early intervention or education.

Solution

The Pulselight solution architecture supports state-wide data sharing among practitioners, administrators, and policy-makers. The solution must ingest and analyze millions of records from Medicaid claims, regional hospitals, doctors, pharmacies, the FDA, etc. Vertica gives Pulselight the performance and scale needed to combine and correlate this data for instant feedback. The data is fused, cleansed, and enriched, before it passes through the Vertica Analytics Platform for real-time metrics correlation. This is leveraged in the Pulselight solution architecture's content layer, where a set of tools support opioid abuse prevention with metrics, datasets, charts, and alerts made available through interactive web-based applications.

Helmandollar comments: “Leveraging Vertica's unique proposition in predictive analytics, we can transform our data into analytically useful metrics, from a patient, prescriber, and pharmacy perspective. With so many data sources, we can correlate information on a patient's average daily morphine milligram equivalents (MME), their average daily supply, even if it encompasses multiple and overlapping prescriptions, dangerous drug combinations, their time on opioids, and a treatment, overdose, and diagnostic history.”

Taking millions of prescriptions and extrapolating this into a per-day MME picture for individual

patients soon adds up, and the Pulselight system must process up to 1.5 billion records each day. To get meaningful insight, a high performance data analytics solution is the only answer, according to Helmandollar: “Vertica rapidly illuminates the intelligence hidden in our data. Through an interactive web-based application, it gives our stakeholders real-time answers to complex questions, so that state resources are allocated where they have the greatest impact on lives and costs.”

Prevention is key in combating the opioid epidemic, and predictive analytics play a role in identifying individuals at high risk of overdose, as Helmandollar explains: “Leveraging Vertica, we apply a machine learning model to investigate Medicaid claims, using over 100 different features. This helps locate at-risk patients geographically and initiate outreach, education, or intervention programs.”

Results

Based on Pulselight's Vertica-driven analytics, alerts are created for different groups, such as minors with an overdose, or high-prescribing pharmacies. By responding proactively, Pulselight can see that the number and amount of opioid prescriptions decrease for those notified providers, or those who attend educational sessions. The Pulselight system also shows that certain individuals have their first treatment for substance use disorder after outreach has been made.

The outcomes are fed back into the system, so that results are measured and tracked over time, and patient programs are adjusted or repeated where successful. Irene Manautou

Williams, CEO of Pulselight: “Early intervention is key in combating the opioid epidemic and avoiding associated cost escalation. Vertica helps us simplify a huge volume of complex and hard-to-find data with lightning speed, enabling us to meet our mission of identifying individuals at high risk of overdose.”

By optimizing the available data, Pulselight can focus on the most vulnerable populations for immediate impact. Helmandollar concludes: “Vertica helps us identify and predict high risk providers, pharmacies, and patients. Early intervention means we connect high risk patients with education, training, treatment, wellness programs, and substance abuse services. This improves the quality of care, reduces costs, and ultimately saves lives.”